# Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

# Listing of Claims:

Claim 1 (Currently Amended): A (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) of the formula:

wherein

Base is a purine-or-pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or I;

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein R<sup>1</sup> is H or phosphate; R<sup>2</sup> is H or phosphate; R<sup>3</sup> and R<sup>2</sup> or R<sup>7</sup> can also be linked with cyclic phosphate group.

 $R^2$  and  $R^2$  are independently H,  $C_{1:4}$  alkyl,  $C_{1:4}$  alkenyl,  $C_{1:4}$  alkynyl, vinyl,  $N_3$ , CN, Cl, Br, F, I,  $NO_2$ ,  $C(O)O(C_{1:4}$  alkyl),  $C(O)O(C_{1:4}$ 

alkynyl),  $C(O)O(C_{1-4}$  alkenyl),  $O(C_{1-4}$  acyl),  $O(C_{1-4}$  alkyl),  $O(C_{1-4}$  alkenyl),  $S(C_{1-4} \text{ acyl})$ ,  $S(C_{1-4} \text{ alkyl})$ ,  $S(C_{1-4} \text{ alkynyl})$ ,  $S(C_{1-4} \text{ alkenyl})$ ,  $SO(C_{1-4} \text{ acyl})$ , SO(C1.4 alkv1), SO(C1.4 alkvnvl), SO(C1.4 alkenvl), SO(C1.4 acvl), SO<sub>2</sub>(C<sub>1,4</sub> alkyl), SO<sub>2</sub>(C<sub>1,4</sub> alkynyl), SO<sub>2</sub>(C<sub>1,4</sub> alkenyl), O<sub>3</sub>S(C<sub>1,5</sub> acyl), O<sub>3</sub>S(C<sub>1,4</sub> alkyl), O<sub>3</sub>S(C<sub>1,4</sub> alkenyl), NH<sub>2</sub>, NH(C<sub>1,4</sub> alkyl), NH(C<sub>1,4</sub> alkenyl), NH(C1-4 alkynyl), NH(C3-4 acyl), N(C1-4 alkyl)2, N(C1-18 acyl)2, wherein alkyl, alkynyl, alkenyl and vinyl are optimally optionally substituted by Na. CN, one to three halogen (Cl. Br. F. 1), NO<sub>2</sub> C(O)O(C<sub>1,4</sub> alkyl), C(O)O(C<sub>1</sub> 4 alkyl), C(O)O(C),4 alkynyl), C(O)O(C),4 alkenyl), O(C),4 acyl), O(C),4 alkyl), O(C1.4 alkenyl), S(C1.4 acyl), S(C1.4 alkyl), S(C1.4 alkynyl), S(C1.4 alkenyl), SO(C1-4 acvi), SO(C1-4 alkvi), SO(C1-4 alkvnyl), SO(C1-4 alkenyl), SO<sub>2</sub>(C<sub>1-4</sub> acyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenvl), O(S(C), acvl), O(S(C), alkvl), O(S(C), alkenvl), NHo, NH(C), a alkyl), NH(C1-4 alkenyl), NH(C1-4 alkynyl), NH(C1-4 acyl), N(C1-4 alkyl)2. N(C<sub>1-4</sub> acv1)<sub>2</sub>, OR<sup>7</sup>; R<sup>2</sup> and R<sup>2</sup> can be linked together to form a vinyl ontionally substituted by one or two of N3, CN, Cl, Br, F. I, NO2, and R6 is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH3, OCHs, OCHsCHs, hydroxy methyl (CHsOH), fluoromethyl (CHsF), azido (Na), CHCN, CH6Na, CH6NH6, CH5NHCHa, CH6N(CH6)s, alkyne (optionally substituted), or fluoro:

or its pharmaceutically acceptable salt or prodrug thereof.

Claim 2 (Currently Amended): The (2/R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (β-D or β-L) of claim 1 or its pharmaceutically acceptable salt or produig thereof, wherein the Base is represented by the following formula selected from the group consisting of:

wherein

Y is Nor CH.

R<sup>3</sup>[[,]] and R<sup>4</sup> and R<sup>8</sup>-are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>r, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>r, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH-and-CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, lower hydroxyalkyl, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONH

R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12c</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl or, in the case of NHR' and COR', R' can be an amino acid residue.

Claim 3 (Currently Amended): The (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D) of claim 1 or its pharmaceutically acceptable salt or prodrug thereof,

wherein the Base is represented by the following formula selected from the group consisting of (a) or (b):

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Response to Restriction Requirement

and wherein  $R^1$  is H,  $R^2$  is OH,  $R^2$  is H,  $R^3$  is H, and  $R^4$  is  $NH_2$  or OH\_\_\_? and  $R^4$  is  $NH_2$ -

Claim 4 (Currently Amended): A (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside  $(\beta$ -D or  $\beta$ -L<sub>3</sub> of the formula.

wherein

the Base is represented by the following formula selected from the group consisting of

Y is Nor CH:

R<sup>1</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-

phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein  $\mathbb{R}^1$  is H or phosphate;  $\mathbb{R}^2$  is H or phosphate,  $\mathbb{R}^1$  and  $\mathbb{R}^2$  or  $\mathbb{R}^7$  can also be linked with cyclic phosphate group;

R2 and R2 are independently H. Cl., alkyl, Cl., alkenyl, Cl., alkynyl, vinyl, Na. CN, Cl, Br, F, L NO<sub>2</sub> C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkynyl),  $C(O)O(C_{1:4}$  alkenyl),  $O(C_{1:4}$  acyl),  $O(C_{1:4}$  alkyl),  $O(C_{1:4}$  alkenyl),  $S(C_{1,4} \text{ acv})$ ,  $S(C_{1,4} \text{ alkv})$ ,  $S(C_{1,4} \text{ alkv})$ ,  $S(C_{1,4} \text{ alkenv})$ ,  $S(C_{1,4} \text{ acv})$ , SO(C3.4 alkyl), SO(C3.4 alkynyl), SO(C3.4 alkenyl), SO<sub>2</sub>(C3.4 acyl), SO<sub>2</sub>(C<sub>1,4</sub> alkyl), SO<sub>2</sub>(C<sub>1,4</sub> alkynyl), SO<sub>2</sub>(C<sub>1,4</sub> alkenyl), O<sub>3</sub>S(C<sub>1,4</sub> acyl), O3S(C1.4 alkyl), O3S(C1.4 alkenyl), NH2, NH(C1.4 alkyl), NH(C1.4 alkenyl), NH(C1.4 alkynyl), NH(C1.4 acyl), N(C1.4 alkyl), N(C1.18 acyl), wherein alkyl, alkynyl, alkenyl and vinyl are optimally optionally substituted by Na. CN, one to three halogen (Cl, Br, F, I), NO2 C(O)O(C1.4 alkyl), C(O)O(C1. 4 alkyl), C(O)O(C<sub>1-4</sub> alkynyl), C(O)O(C<sub>1-4</sub> alkenyl), O(C<sub>1-4</sub> acyl), O(C<sub>1-4</sub> alkyl), O(C1,4 alkenyl), S(C1,4 acyl), S(C1,4 alkyl), S(C1,4 alkynyl), S(C1,4 alkenyl), SO(C1.4 acvi), SO(C1.4 alkvi), SO(C1.4 alkvnvl), SO(C1.4 alkenyl), SO<sub>2</sub>(C<sub>1-4</sub> acyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), O<sub>3</sub>S(C<sub>1-4</sub> acyl), O<sub>3</sub>S(C<sub>1-4</sub> alkyl), O<sub>3</sub>S(C<sub>1-4</sub> alkenyl), NH<sub>2</sub>, NH(C<sub>1-4</sub> alkyl), NH(C1-4 alkenyl), NH(C1-4 alkynyl), NH(C1-4 acyl), N(C1-4 alkyl)2, N(C<sub>1-4</sub> acv1)<sub>2</sub>, OR<sup>7</sup>, R<sup>2</sup> and R<sup>2</sup> can be linked together to form a vinvl optionally substituted by one or two of N3, CN, Cl, Br, F, I, NO5.

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R<sup>3</sup>[[,]] and R<sup>4</sup> and R<sup>6</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH2, NHR', NR'2, lower alkyl of C₁-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C₁-C<sub>6</sub>, such as CF<sub>3</sub>-and CH<sub>2</sub>CH<sub>2</sub>E<sub>7</sub>-lower alkenyl of C₂-C<sub>6</sub>, such as CH=CHC<sub>1</sub>, chalogenated (F, Cl, Br, I) lower alkenyl of C₂-C<sub>6</sub>, such as CH=CHCl, CH=CHBr and CH=CHI<sub>7</sub>-lower alkynyl of C₂-C<sub>6</sub>, such as C=CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkynyl of C₂-C<sub>6</sub>, lower alkoxy of C₁-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH<sub>1</sub>-halogenated (F, Cl, Br, I) lower alkoxy of C₁-C<sub>6</sub>, lower hydroxyalkyl, CO₂H, CO₂H', CONH₂, CONHR', CONR'2, CH=CHCO₂H, CH=CHCO₂H', CH=CHCO₂R';

R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl is an amino acid-residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl.or. in the case of NHR' and COR', R' can be an amino acid residue;

R<sup>6</sup> is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH<sub>3</sub>, OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido (N<sub>3</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof.

Claim 5 (Currently Amended): The (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D) of claim 4 or its pharmaceutically acceptable salt or prodrug thereof, wherein

the Base is represented by the following formula

and R<sup>3</sup> is H, R<sup>2</sup> is OH, R<sup>2</sup> is H, R<sup>3</sup> is H, R<sup>4</sup> is NH<sub>2</sub> or OH, and R<sup>6</sup> is H.

Claim 6 (Currently Amended): A (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) or its pharmaceutically acceptable salt or prodrug thereof of the structure:

wherein the Base is a purine or pyrimidine base;

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or I; and,

R<sup>1</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>7</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>7</sup> can also be linked with cyclic phosphate group.

Claim 7 (Currently Amended): The (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside  $(\beta$ -D or  $\beta$ -L) of claim 6 or its pharmaceutically acceptable salt or prodrug thereof,

wherein the Base is represented by the following formula selected from the group consisting of-

Y is Nor CH:

R<sup>3</sup>[[,]] and R<sup>4</sup> and R<sup>5</sup>-are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, lower hydroxyalkyl, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>3</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R'; and,

R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl-is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl or, in the case of NHR' and COR', R' can be an amino acid residue.

Claim 8 (Currently Amended). The (2'R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (β-D) of claim 6 or its pharmaceutically acceptable salt or prodrug thereof.

wherein the Base is represented by the following formula selected from the group consisting of (a) or (b):

and wherein  $R^1$  and  $R^7$  are  $H,\,R^3$  is  $H,\,$  and  $R^4$  is  $NH_2$  or  $OH_{\underline{\ \ \, }}$  and  $R^6$  is  $NH_2$ .

Claim 9 (Currently Amended): A (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) of the formula.

wherein the Base is

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic),  $C(W)_2$ , wherein W is F, Cl, Br, or I;

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and

benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein  $\mathbf{R}^1$  is H or phosphate;  $\mathbf{R}^2$  is H or phosphate;  $\mathbf{R}^3$  and  $\mathbf{R}^2$  or  $\mathbf{R}^7$  can also be linked with cyclic phosphate group,

R2 and R2 are independently H, C1.4 alkyl, C1.4 alkenyl, C1.4 alkynyl, vinyl, N3. CN, Cl, Br, F, L NO2 C(O)O(C1.4 alkv1), C(O)O(C1.4 alkv1), C(O)O(C1.4 alkynyl), C(O)O(C1.4 alkenyl), O(C1.4 acvl), O(C1.4 alkyl), O(C1.4 alkenyl),  $S(C_{1:4} \text{ acyl})$ ,  $S(C_{1:4} \text{ alkyl})$ ,  $S(C_{1:4} \text{ alkynyl})$ ,  $S(C_{1:4} \text{ alkenyl})$ ,  $SO(C_{1:4} \text{ acyl})$ , SO(Cs.a alkyl), SO(Cs.a alkynyl), SO(Cs.a alkenyl), SO(Cs.a acyl), SO<sub>2</sub>(C<sub>1,4</sub> alkyl), SO<sub>2</sub>(C<sub>1,4</sub> alkynyl), SO<sub>2</sub>(C<sub>1,4</sub> alkenyl), O<sub>3</sub>S(C<sub>1,4</sub> acyl), OsS(Cs, alkyl), OsS(Cs, alkenyl), NHs, NH(Cs, alkyl), NH(Cs, alkenyl), NH(C1-4 alkynyl), NH(C1-4 acyl), N(C1-4 alkyl)2, N(C1-18 acyl)2, wherein alkyl, alkynyl, alkenyl and vinyl are optimally optionally substituted by N3. CN, one to three halogen (CL Br. F. I), NO> C(O)O(C a alkyl), C(O)O(C a a alkyl), C(O)O(C), alkynyl), C(O)O(C), alkenyl), O(C), acyl), O(C), alkyl), O(C1-4 alkenyl), S(C1-4 acyl), S(C1-4 alkyl), S(C1-4 alkynyl), S(C1-4 alkenyl), SO(C1-4 acyl), SO(C1-4 alkyl), SO(C1-4 alkynyl), SO(C1-4 alkenyl), SO<sub>2</sub>(C<sub>1-4</sub> acyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), O<sub>3</sub>S(C<sub>1-4</sub> acyl), O<sub>3</sub>S(C<sub>1-4</sub> alkyl), O<sub>3</sub>S(C<sub>1-4</sub> alkenyl), NH<sub>2</sub>, NH(C<sub>1-4</sub> alkyl), NH(Cs., alkenyl), NH(Cs., alkynyl), NH(Cs., acyl), N(Cs., alkyl), N(C<sub>1,d</sub> acv1)<sub>2</sub>, OR<sup>7</sup>; R<sup>2</sup> and R<sup>T</sup> can be linked together to form a vinvl optionally substituted by one or two of N3, CN, Cl, Br, F, I, NO2;

R<sup>3</sup> and R<sup>4</sup> are independently H, halogen including F, CI, Br, I, OH, OR', SH, SR',
NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, CI, Br, I) lower
alkyl of C<sub>1</sub>-C<sub>6</sub>, such as CF<sub>3</sub>-and CH<sub>2</sub>CH<sub>2</sub>F<sub>7</sub>-lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as
CH=CH<sub>2</sub>-halogenated (F, CI, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, such as
CH=CHCI<sub>2</sub>-CH=CHB<sub>7</sub>-and CH=CHI<sub>2</sub>-lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as

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GmCH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>1</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>3</sub>H, CH=CHCO<sub>3</sub>R'; and

R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12a</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl or, in the case of NHR' and COR, R' can be an amino acid residue;

R<sup>6</sup> is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH<sub>3</sub>, OCH<sub>3</sub>, OCH<sub>3</sub>, CH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido (N<sub>3</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro.

or its pharmaceutically acceptable salt or prodrug thereof.

Claim 10 (Currently Amended): A (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside  $(\beta$ -D or  $\beta$ -L) of the formula

wherein the Base is

R<sup>3</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-

phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered *in vivo* is capable of providing a compound wherein  $\mathbb{R}^1$  is H or phosphate;  $\mathbb{R}^2$  is H or phosphate;  $\mathbb{R}^1$  and  $\mathbb{R}^2$  or  $\mathbb{R}^7$  can also be linked with cyclic phosphate group;

R<sup>3</sup> and R<sup>4</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as -CH<sub>2</sub>-CH<sub>2</sub>-H<sub>2</sub>-H<sub>2</sub>-plower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as -CH=-CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as -CH=-CHC<sub>1</sub>-CH=-CHBr-and-CH=-CHL<sub>2</sub>-lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as -CH<sub>2</sub>-CH<sub>2</sub>-halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>1</sub>-C<sub>6</sub> such as -CH<sub>2</sub>OH and -CH<sub>2</sub>-CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, lower hydroxyalkyl, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>3</sub>, CONR'<sub>2</sub>, CH=-CHCO<sub>2</sub>H, CH=-CHCO<sub>2</sub>R';

R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl is an amino acid-residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl or, in the case of NHR' and COR', R' can be an amino acid residue;

or its pharmaceutically acceptable salt or prodrug thereof.

Claim 11 (Original): A (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside  $(\beta - D)$  or its pharmaceutically acceptable salt or prodrug thereof of the formula:

Claims 12-15 (Canceled).

Claim 16 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 1 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier, a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl-nucleoside (β-D-or β-L) of the formula:

subsenio

Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW-(R, S, or racemic), C(W)<sub>2</sub>, wherein W is F; Cl. Br, or I;

R\* and R\* are independently-H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate produg. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid.

including a phospholipid, an Lor-D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group-which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> is H or phosphate; R<sup>2</sup> is H or phosphate; R<sup>3</sup> and R<sup>2</sup> or R<sup>7</sup> can also be linked with cyclic phosphate group;

R3 and R3 are independently H. C., alkyl. C., alkenyl. C., alkynyl. vinyl. Na-CN\_CL Br\_F\_L NOs C(O)O(C\_\_alkvl) C(O)O(C\_\_alkvl) C(O)O(C\_\_ alkynyl), C(O)O(C1,4 alkenyl), O(C3,4 acyl), O(C1,4 alkyl), O(C3,4 alkenyl), S(C\_\_aevi), S(C\_\_alkvi), S(C\_\_alkvnvi), S(C\_\_alkenvi), SO(C\_\_aevi), SO(C1.4 alkvl). SO(C1.4 alkvnvl). SO(C1.4 alkenvl). SO<sub>2</sub>(C1.4 acvl). SO/(Ciralkyl) SO/(Ciralkynyl) SO/(Ciralkenyl) O/S(Ciracyl) OaS(Caralkyl), OaS(Caralkenyl), NHz, NH(Caralkyl), NH(Caralkenyl), NH(CL alkynyl), NH(CL acyl), N(CL alkyl), N(CL acyl), wherein alkyl, alkynyl, alkenyl and vinyl are optinally substituted by Na, CN, one to three balooen (Cl. Br. F. D. NO, C(O)O(C, alkyl), C(O)O(C, alkyl) C(O)O(C, alkynyl), C(O)O(C, alkenyl), O(C, acvl), O(C, alkyl), O(C\_\_alkenvl), S(C\_\_acvl), S(C\_\_alkvl), S(C\_\_alkvnvl), S(C\_\_a alkenvi), SO(CL-acvi), SO(CL-alkvi), SO(CL-alkvnvi), SO(CLalkenyl), SO<sub>2</sub>(C<sub>1.4</sub>-acyl), SO<sub>2</sub>(C<sub>1.4</sub>-alkyl), SO<sub>2</sub>(C<sub>1.4</sub>-alkynyl), SO<sub>2</sub>(C<sub>1.4</sub> alkenyl) O.S(C., acvl) O.S(C., alkvl) O.S(C., alkenyl) NH, NH(C., alkyl) NH(C, ralkonyl) NH(C, ralkynyl) NH(C, racyl) N(C, ralkyl)-N(C, acv1): OR2 R3 and R3 can be linked together to form a vinvl optionally substituted by one or two of Na. CN, Cl. Br. F. L NO2:

R<sup>c</sup> is an optionally-substituted alkyl (including lower alkyl), eyano (CN), CH<sub>3</sub>; OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>4</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>1</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro.

or its pharmaceutically acceptable salt or prodrug thereof, a pharmaceutically acceptable earner.

Claim 17 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

The composition of claim 16, wherein Base is selected from the group consisting of

wherein

Y is Nor CH.

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NRR', hower alkyl of C<sub>4</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>, C<sub>6</sub>, such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F. lower alkenyl of C<sub>2</sub>, C<sub>6</sub> such as CH=CHCI, chalogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>, C<sub>6</sub>, such as CH=CHCI, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, such as CHCH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>R, CH=CHCO<sub>2</sub>R', and,

R<sup>2</sup> is an optionally-substituted alkyl-of C<sub>1</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>62</sub> optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>62</sub>, or optionally-substituted acyl-

Claim 18 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

## The composition of claim 16, wherein

Base is selected from the group consisting of (a) or (b):

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 

and wherein  $R^4$  is H,  $R^2$  is OH,  $R^2$  is H,  $R^A$  is H, and  $R^4$  is NH2 or OH, and  $R^8$  is NH2:

Claim 19 (Currently Amended). A pharmaceutical composition comprising the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier...a(2/R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (β-D-or β-L) of the formula:

wherein

Base is selected from the group consisting of

Y is N or CH.

R\* and R\* are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in viru is capable of providing a compound wherein R\* is H or phosphate; R\* is H or phosphate; R\* and R\* or R\* can also be linked with cyclic phosphate group;

Rand Rand independently H. C. ralkyl, C. ralkenyl, C. ralkynyl, vinyl, No. CN\_CL Br\_E\_LNO\_C(O)O(C\_\_alkyl)\_C(O)O(C\_\_alkyl)\_C(O)O(C\_a alkynyl) C(O)O(C, alkenyl) O(C, acyl) O(C, alkyl) O(C, alkenyl) S(C\_\_acvl)\_S(C\_\_alkvl)\_S(C\_\_alkvnvl)\_S(C\_\_alkenvl)\_SO(C\_\_acvl)\_ SO(C\_\_alkvh, SO(C\_\_alkvnvh, SO(C\_aalkenvh, SO<sub>2</sub>(C\_\_aevh), SO<sub>2</sub>(C<sub>1</sub>, alkvl), SO<sub>2</sub>(C<sub>1</sub>, alkvnvl), SO<sub>2</sub>(C<sub>1</sub>, alkenvl), O<sub>2</sub>S(C<sub>1</sub>, acvl),  $O_2S(C_{1-4}alkyl)$ ,  $O_2S(C_{1-4}alkenyl)$ ,  $NH_{2r}NH(C_{1-4}alkyl)$ ,  $NH(C_{1-4}alkenyl)$ . NH(C\_ alkynyl) NH(C\_ acyl) N(C\_ alkyl) N(C\_ acyl) wherein alkyl alkynyl alkenyl and vinyl are optinally substituted by N2 CN one to three halogen (Cl. Br. F. D. NO2 C(O)O(Cs. alkvl). C(O)O(Cs. alkvl).  $C(O)O(C_{1,a}alkvnvl)$ ,  $C(O)O(C_{1,a}alkenvl)$ ,  $O(C_{1,a}aevl)$ ,  $O(C_{1,a}alkvl)$ .  $O(C_{\downarrow\downarrow}$  alkenyl),  $S(C_{\downarrow\downarrow}$  acyl),  $S(C_{\downarrow\downarrow}$  alkyl),  $S(C_{\downarrow\downarrow}$  alkynyl),  $S(C_{\downarrow\downarrow}$ alkenyl), SO(C14 acyl), SO(C14 alkyl), SO(C14 alkynyl), SO(C14 alkenyl) SO-(C, acvl) SO-(C, alkyl) SO-(C, alkynyl) SO-(C, a alkenyl), O.S(C., acvl), O.S(C., alkyl), O.S(C., alkenyl), NH., NH(C., alkyl), NH(C\_aalkenyl), NH(C\_aalkynyl), NH(C\_aacyl), N(C\_aalkyl);

N(C<sub>1-r</sub>acyl)<sub>3</sub>, OR<sup>2</sup>; R<sup>2</sup> and R<sup>3</sup>, can be linked together to form a vinyl optionally substituted by one or two of N<sub>4</sub>, CN, CI, Br. F, I, NO<sub>2</sub>;

- R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl., Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR-2, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkony of C<sub>1</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkony of C<sub>1</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>H, CO<sub>2</sub>H, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>3</sub>, CONR'<sub>2</sub>.
  - R<sup>2</sup> is an optionally substituted alkyl of C<sub>1</sub>-C<sub>42</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>65</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>65</sub>, or optionally substituted acyl;
- R<sup>6</sup> is an optionally substituted alkyl-(including lower alkyl), cyano (CN), CH<sub>3</sub>;

  OCH<sub>2</sub>, OCH<sub>2</sub>CH<sub>4</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoremethyl (CH<sub>2</sub>F), azido
  (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>4</sub>, CH<sub>3</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne
  (optionally substituted), or fluoro;

or its pharmaceutically acceptable salt or produce thereof in a pharmaceutically acceptable earner.

Claim 20 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

The composition of claim 19, wherein

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and R1 is H. R2 is OH. R2 is H. R3 is H. R4 is NH, or OH, and R5 is H.

Claim 21 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 6 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

A pharmaceutical composition comprising a (2/R)-2' deoxy-2'-fluoro-2'-(`-methyl nucleoside (β-D or β-L) or its pharmaceutically acceptable salt or prodrug thereof, in a pharmaceutically acceptable carrier, of the structure:

wherein Base is a purine or pyrimidine base;

X is O. S. CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F<sub>4</sub> Cl. Br, or L and,

R<sup>3</sup>-and R<sup>2</sup>-are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally-substituted phenyl and lower acyl, alkyl, including lower alkyl; O-substituted carboxyalkylamino or its peptide derivatives; sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid, a carbohydrate, a peptide.

a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>2</sup> can also be linked with evelic phosphate group.

Claim 22 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 7 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

The composition of claim 21, wherein

Base is selected from the group consisting of:

Y is N or CH:

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl., Br., I, OH, OR.', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>4</sub>-C<sub>6</sub>, halogenated (F, Cl, Br., I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br., I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr-and CH=CHI, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br., I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br., I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br., I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>3</sub>H, CH=CHCO<sub>3</sub>R', and

R' is an optionally substituted alkyl of C<sub>4</sub>-C<sub>42</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>65</sub>

optionally substituted lower-alkenyl of  $C_2\text{-}C_{Ac}$  or optionally substituted acvl-

Claim 23 (Currently Amended). A pharmaceutical composition comprising the nucleoside of claim 8 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

The composition of claim 21, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^4$  and  $R^2$  are  $H_c$   $R^3$  is  $H_c$  and  $R^4$  is NH2 or OH, and  $R^5$  is NH2.

Claim 24 (Currently Amended): <u>A pharmaceutical composition comprising the</u> nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

A pharmaceutical composition comprising a (2/R)-2'-deoxy-2'-fluoro-2'-C-methylnucleoside (β-D or β-L) of the formula:

wherein

Base is

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F<sub>1</sub> Cl. Be-or-k

R<sup>3</sup>-and-R<sup>2</sup>-are independently-H<sub>2</sub>-phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phonyl-and-lower-acyl, alkyl, including lower-alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phonyl group is optionally substituted, a lipid, including a phospholipid, an t-or-D-amino acid (or racemic mixture), a earbohydrate, a peptide, a cholesterol, or other-pharmaceutically acceptable leaving group-which when administered in vivo is capable of providing a compound wherein R<sup>3</sup> is H or phosphate; R<sup>2</sup> is H or phosphate, R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group.

 $R^{2} \text{ and } R^{2} \text{ are independently H. } C_{1,-1} \text{ alkyl., } C_{1,+2} \text{ alkenyl., } C_{1,+2} \text{ alkynyl., } \text{ vinyl., } N_{2,-1} \text{ constitution } N_{2,-1} \text{ constitution$ 

 $O(C_{1-\epsilon}\text{alkenyl}), S(C_{1-\epsilon}\text{acyl}), S(C_{1-\epsilon}\text{alkyl}), S(C_{1-\epsilon}\text{alkynyl}), S(C_{1-\epsilon}\text{alkynyl}), S(C_{1-\epsilon}\text{alkynyl}), S(C_{1-\epsilon}\text{alkynyl}), SO(C_{1-\epsilon}\text{alkynyl}), SO(C_{1-\epsilon}\text{alkynyl}), SO_2(C_{1-\epsilon}\text{alkynyl}), SO_2(C_{1-\epsilon}\text{alkynyl}),$ 

- R<sup>3</sup> and R<sup>4</sup> are independently H, halogen including F, Cl, Br, I, OH, OR, SH, SR, NH<sub>2</sub>, NHR; NR'<sub>2</sub>, lower alkyl of C<sub>3</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>, C<sub>6</sub> such as CH<sub>2</sub>CH<sub>3</sub>F, lower alkenyl of C<sub>2</sub>, C<sub>6</sub> such as CH=CHCl<sub>3</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>, C<sub>6</sub> such as CH=CHCl<sub>3</sub>, CH=CHBr and CH=CHL<sub>1</sub> lower alkynyl of C<sub>2</sub>, C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, lower alkony of C<sub>4</sub>, C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkony of C<sub>4</sub>, C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkony of C<sub>4</sub>, C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONR'<sub>2</sub>, CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>3</sub>R'.
- R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>22</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>65</sub> optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>65</sub> or optionally substituted acyl; and
- R<sup>6</sup> is an optionally-substituted alkyl-(including-lower-alkyl-), eyano-(EN), CH<sub>2</sub>; OCH<sub>2</sub>CH<sub>4</sub>, hydroxy-methyl-(GH<sub>2</sub>OH), fluoromethyl-(CH<sub>2</sub>F), azido (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH3)<sub>20</sub> alkyne (optionally-substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof and a pharmaceutically acceptable earrier.

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Claim 25 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 10 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

A pharmaceutical composition comprising a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D or B-L) of the formula:

wherein

Base is

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower-acyl, alkyl, including lower-alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>2</sup> can also be linked with cyclic phosphate group;

 $R^3$  and  $R^4$  are independently-H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of  $C_4$ - $C_6$ , halogenated (F, Cl, Br, I) lower

alkyl-of  $C_3$ - $C_6$ -such as  $CF_2$  and  $CH_2$ CH $_2$ F, lower alkenyl-of  $C_2$ - $C_6$  such as CH= $CH_2$ -halogenated (F, Cl, Br, I) lower alkenyl-of  $C_2$ - $C_6$  such as CH=CHCl, CH=CHBF and CH=CHI, lower alkynyl-of  $C_2$ - $C_6$ -such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl-of  $C_2$ - $C_6$ -lower alkoxy-of  $C_4$ - $C_6$ -such as  $CH_2OH$  and  $CH_2OH$ , halogenated (F, Cl, Br, I) lower alkoxy-of  $C_4$ - $C_6$ - $C_6$ - $C_0$ - $C_6$ 

R2 is an optionally-substituted alkyl-of C<sub>4</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>65</sub> optionally-substituted lower alkenyl-of C<sub>2</sub>-C<sub>65</sub> or optionally-substituted acyl-

or its pharmaceutically acceptable salt or prodrug thereof, in a pharmaceutically acceptable

Claim 26 (Currently Amended): A pharmaceutical composition comprising the nucleoside of claim 11 or its pharmaceutically acceptable salt or prodrug and a pharmaceutically acceptable carrier.

A pharmaceutical composition comprising a (2/R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside  $(\beta$ -D) or its pharmaceutically acceptable salt or prodrug thereof, in a pharmaceutically acceptable carrier of the formula:

Claims 27-30 (Canceled).

Claim 31 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 1 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

a (21/6)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D-or-B-L) of the formula:

wherein

Base is a purine or pyrimidine base:

X is O. S. CH<sub>2</sub>. Se, NH, N-alkyl, CHW (R, S. or racemie), C(W)<sub>2</sub>, wherein W is F, Cl. Br, or I;

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally-substituted phenyl-and-lower-acyl, alkyl, including lower-alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>3</sup> is H-or phosphate; R<sup>3</sup> is H-or phosphate; R<sup>3</sup> is H-or phosphate; R<sup>3</sup> and R<sup>2</sup>-or R<sup>2</sup>-can also be linked with cyclic-phosphate group;

> R2 and R2 are independently H, C1-ralkyl, C1-ralkenyl, C1-ralkynyl, vinyl, N2-CN. Cl. Br. F. I. NO. C(O)O(C, alkyl), C alkynyl): C(O)O(C\_\_alkenyl): O(C\_\_acvl): O(C\_\_alkyl): O(C\_\_alkenyl): S(CL, acvi), S(CL, aikvi), S(CL, aikvnvl), S(CL, aikenvl), SO(CL, acvi), SO(C\_alkyl)-SO(C\_alkynyl)-SO(C\_alkenyl)-SO(C\_alkenyl) SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), O<sub>4</sub>S(C<sub>1-4</sub> acyl), OaS(Caralkyl) OaS(Caralkenyl) NHz NH(Caralkyl) NH(Caralkenyl) NH(C\_\_alkynyl)\_NH(C\_\_acyl)\_N(C\_\_alkyl)\_N(C\_\_acyl)\_ wherein alkyl, alkynyl, alkenyl and vinyl are optimally substituted by N., CN, one to three halogen (Cl. Br. F. I). NO2 C(O)O(C, alkyl), C(O)O(C, alkyl), C(O)O(C3...alkynyl), C(O)O(C4...alkenyl), O(C4.ancyl), O(C3...alkyl), O(C\_ alkenyl) S(C\_ acyl) S(C\_ alkyl) S(C\_ alkynyl) S(C\_ alkenyl), SO(CL, acvl), SO(CL, alkvl), SO(CL, alkvnyl), SO(CL, alkenyl); SO<sub>2</sub>(C<sub>Ld</sub> acyl); SO<sub>2</sub>(C<sub>Ld</sub> alkyl); SO<sub>2</sub>(C<sub>Ld</sub> alkynyl); SO<sub>2</sub>(C<sub>Ld</sub> alkenvi), OaS(Cadacvi), OaS(Cadalkvi), OaS(Cadalkenvi), NHa, NH(Cad alkel) NHC, alkerel) NHC, alkerel) NHC, acel) NC, alkel)-N(CL, acvi). OR2-R2 and R2 can be linked together to form a vinvi optionally substituted by one or two of Na CN, Cl. Br. F. L. NO2:

> R<sup>6</sup>-is an optionally substituted alkyl-(including-lower alkyl-), cyano (CN), CH<sub>2</sub>; OCH<sub>2</sub>, OCH<sub>2</sub>CH<sub>3</sub>, hydroxy-methyl-(CH<sub>2</sub>OH), fluoromethyl-(CH<sub>2</sub>F), azido (N<sub>8</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>4</sub>)<sub>3</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or produig thereof, optionally in a pharmaceutically acceptable carrier.

Claim 32 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim-31:

wherein Base is selected from the group consisting of

#### Vis Nor CH.

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H<sub>1</sub> halogen including F, Cl., Br, L, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>-halogenated (F, Cl, Br, 1) lower alkyl of C<sub>1</sub>-C<sub>6</sub>-such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHC<sub>1</sub>, chalogenated (F, Cl, Br, 1) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHC<sub>1</sub>, CH=CHBr and CH=CHI<sub>1</sub>, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, 1) lower alkynyl of C<sub>2</sub>-C<sub>6</sub> lower alkoxy of C<sub>3</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, 1) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>H, CO<sub>3</sub>H', CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>3</sub>, CONH<sub>3</sub>

R' is an optionally-substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl is an amino acid residue), cycloalkyl, optionally-substituted alkynyl of C<sub>2</sub>-C<sub>65</sub>, optionally-substituted lower-alkenyl of C<sub>2</sub>-C<sub>65</sub>, or optionally-substituted acyl.

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Claim 33 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

## The method of claim 31, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^4$  is H,  $R^2$  is OH,  $R^3$  is H,  $R^3$  is H, and  $R^3$  is NH<sub>2</sub> or OH, and  $R^4$  is NH<sub>2</sub>.

Claim 34 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier\_a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl-nucleoside (B-D-or B-L) of the formula:

wherein

Base is selected from the group consisting of

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R<sup>2</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in two is capable of providing a compound wherein R<sup>1</sup> is H or phosphate, R<sup>2</sup> is H or phosphate; R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group.

$$\begin{split} R^2 \text{-and } R^2 \text{-are independently H, } C_{1,4} \text{-alkyl}, C_{1,4} \text{-alkynyl, } \text{-cinyl, } N_{3c} \\ & \in \mathbb{N}, Cl, Br, F, I, NO_2, C(O)O(C_{1,4} \text{-alkyl}), C(O)O(C_{1,4} \text{-alkyl}), C(O)O(C_{1,4} \text{-alkyl}), C(O)O(C_{1,4} \text{-alkyl}), O(C_{1,4} \text{-alkyl}), O(C_{1,4} \text{-alkyl}), O(C_{1,4} \text{-alkyl}), O(C_{1,4} \text{-alkyl}), O(C_{1,4} \text{-alkyl}), SO(C_{1,4} \text{-alkyl}), SO(C_{1,4} \text{-alkyl}), SO(C_{1,4} \text{-alkyl}), SO(C_{1,4} \text{-alkyl}), SO_2(C_{1,4} \text{-alkyl}), S$$

$$\begin{split} &C(O)O(C_{1\leftarrow}alkynyl),\ C(O)O(C_{1\leftarrow}alkenyl),\ O(C_{1\leftarrow}alkyl),\ O(C_{1\leftarrow}alkyl),\ C(C_{1\leftarrow}alkyl),\ S(C_{1\leftarrow}alkyl),\ S(C_{1\leftarrow}alkyl),\ S(C_{1\leftarrow}alkyl),\ S(C_{1\leftarrow}alkynyl),\ S(C_{1\leftarrow}alky$$

- R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently Hi, halogen including F, Ci., Br, I, OH, OR., SH, SR., NH<sub>2</sub>, NH<sub>2</sub>, NH<sub>2</sub>, lower alkyl of C<sub>1</sub>, C<sub>6</sub>, halogenated (F, Cl., Br, I) lower alkyl of C<sub>2</sub>-C<sub>6</sub>, such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl., Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl., Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl., Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl., Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R., CONH<sub>2</sub>, CONHR., CONH<sub>2</sub>, CONHR., CONH<sub>2</sub>, CONHR.
- $R^*$  is an optionally substituted alkyl of  $C_1 \cdot C_{12}$  (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of  $C_2 \cdot C_{67}$  optionally substituted lower alkenyl of  $C_2 \cdot C_{67}$  or optionally substituted acyl.
- R<sup>6</sup>-is-an optionally-substituted alkyl-(including-lower-alkyl), cyano (CN), CH<sub>2c</sub>

  OCH<sub>2</sub>, OCH<sub>3</sub>CH<sub>3c</sub>-hydroxy-methyl-(CH<sub>2</sub>OH), fluoromethyl-(CH<sub>2</sub>F), azido
  (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>4</sub>, CH<sub>3</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>3</sub>, alkyne
  (optionally-substituted), or fluoro:

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

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Claim 35 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim-34, wherein

### Base is

and R' is H. R' is OH. R" is H. R' is H. R' is NH2 or OH, and R' is H.

Claim 36 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 6 or its pharmaceutically acceptable salt or produig optionally in a pharmaceutically acceptable carrier.

a (2/l)-2'-deoxy-2'-fluoro-2'-C-methyl-nucleoside  $(\beta$ -D-or  $\beta$ -L) or its pharmaceutically acceptable salt-or prodrug thereof of the structure:

wherein Base is a purine or pyrimidine base:

X is O. S. CH<sub>2</sub>, So. NH. N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl. Br. or L and

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivu is capable of providing a compound wherein R<sup>4</sup> or R<sup>5</sup> is independently H or phosphate, R<sup>5</sup> and R<sup>2</sup> can also be linked with evelic phosphate group;

optionally, in a pharmaceutically acceptable carrier,

Claim 37 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 7 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

### The method of claim 36 wherein

Base is selected from the group consisting of

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R<sup>3</sup> - R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl. Br, I, OH, OR, SH, SR, NH<sub>4</sub>, NHR, NR'<sub>2</sub>, lower alkyl of C<sub>2</sub>-C<sub>6</sub>, halogenated (F, Cl. Br, I)

lower alkyl-of C<sub>4</sub>-C<sub>6</sub>-such as CF<sub>3</sub> and CH<sub>2</sub>CH<sub>2</sub>F. Jower alkenyl-of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHC<sub>3</sub>, halogenated (F, CI, Br, I) lower alkenyl-of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>-such as C=CH<sub>3</sub>, halogenated (F, CI, Br, I) lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, CI, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR-<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R', and,

R<sup>2</sup> is an optionally-substituted alkyl of C<sub>4</sub>. C<sub>42</sub> (particularly-when the alkyl is an amino acid-residue), cycloalkyl, optionally-substituted alkynyl of C<sub>2</sub>. C<sub>6</sub>; optionally-substituted lower-alkenyl of C<sub>2</sub>. C<sub>6</sub>; or optionally substituted acyl.

Claim 38 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylaxis</u> of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 8 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

## The method of claim-36, wherein

Base is selected from the group consisting of (a) or (b):

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 

and wherein  $\mathbf{R}^4$  and  $\mathbf{R}^7$  are  $H_r$   $\mathbf{R}^4$  is  $H_r$  and  $\mathbf{R}^4$  is NH, or OH, and  $\mathbf{R}^5$  is NH,.

Claim 39 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) of the formula:

wherein

Base is

X is O. S. CH<sub>2</sub>. Se, NH, N-alkyl, CHW (R, S, or racemic). C(W)<sub>2</sub>, wherein W is F, Cl. Be, or I:

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phonyl and lower acyl, alkyl, including lower alkyl. O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of

providing a compound wherein  $R^{k}$  is H or phosphate;  $R^{k}$  is H or phosphate;  $R^{k}$  and  $R^{k}$  or  $R^{k}$  can also be linked with cyclic phosphate group.

R3 and R3 are independently H. C., alkyl. C., alkenyl. C., alkynyl. vinyl. No. CN-Cl-Br-F-L-NO2-C(O)O(C1-4 afkvl)-C(O)O(C1-4 afkvl)-C(O)O(C1-4 alkynyl), C(O)O(C1...; alkenyl), O(C1...; acvl), O(C1...; alkyl), O(C1...; alkenyl), S(C\_\_acvl)\_S(C\_\_alkvl)\_S(C\_\_alkvnvl)\_S(C\_\_alkenvl)\_S(C\_\_acvl) SO(C\_\_alkvl)\_SO(C\_\_alkvnvl)\_SO(C\_\_alkenvl)\_SO(C\_\_acvl)\_ SO<sub>2</sub>(C<sub>1,2</sub> alkvl), SO<sub>2</sub>(C<sub>1,2</sub> alkvnvl), SO<sub>2</sub>(C<sub>1,2</sub> alkenvl), O<sub>1</sub>S(C<sub>1,2</sub> aevl), OsS(Ca., alkyl), OsS(Ca., alkenyl), NH, NH(Ca., alkyl), NH(Ca., alkenyl), NH(C4.4-nlkynyl)-NH(C4.4-nevl)-N(C4.4-nlkyl)2-N(C4.4-nevl)2-wherein alkyl-alkynyl-alkenyl and vinyl are ontinally substituted by N<sub>2</sub> CN one to three halogen (Cl. Br. F. D. NOs C(O)O(Cs. alkyl), C(O)O(Cs. alkyl). C(O)O(C1.4alkvnvl); C(O)O(C1.4alkenvl); O(C1.4acvl); O(C1.4alkvl); O(C1\_alkenvl), S(C1\_acvl), S(C1\_alkvl), S(C1\_alkvnvl), S(C1\_a alkenyl) SOCC, acyl) SOCC, allevi) SOCC, alleviyl) SOCC, alkenyl), SO<sub>2</sub>(C<sub>1</sub>, acyl), SO<sub>2</sub>(C<sub>1</sub>, alkyl), SO<sub>2</sub>(C<sub>1</sub>, alkynyl), SO<sub>2</sub>(C<sub>1</sub>, alkenvl). O2S(C2\_a acvl). O2S(C1\_a alkvl). O2S(C3\_a alkenvl). NH2. NH(C1\_a alkyl) NH(C\_\_alkenyl) NH(C\_\_alkynyl) NH(C\_\_acyl) N(C\_aalkyl) N(CL\_acvi)\_OR2\_R2 and R2 can be linked together to form a vinyl optionally substituted by one or two of N., CN, Cl. Br. F. I. NO.:

R<sup>3</sup>-and R<sup>4</sup>-are independently H, halogen including F; CI<sub>2</sub> Br<sub>1</sub> I; OH<sub>2</sub> OR<sup>2</sup>, SH<sub>2</sub> SR<sub>2</sub> NH<sub>2</sub>, NH<sub>2</sub>, NHR<sup>2</sup>, NR<sup>2</sup>, Iower alkyl of C<sub>3</sub>-C<sub>6</sub>, halogenated (F, CI<sub>2</sub> Br; 1) lower alkyl of C<sub>4</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, CI, Br, 1) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, CI, Br, 1) lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, CI, Br, 1) lower alkynyl of C<sub>2</sub>-C<sub>6</sub> tower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, CI, Br, 1) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R<sup>2</sup>, CONH<sub>2</sub>, CONHR<sup>2</sup>, CONR<sup>2</sup>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>3</sub>R<sup>2</sup>.

R<sup>\*</sup> is an optionally substituted alkyl of C<sub>1</sub>-C<sub>32</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>62</sub> optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>62</sub> or optionally substituted nevl; and:

R° is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH<sub>3</sub>; OCH<sub>3</sub>; OCH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>3</sub>F), azido (N<sub>3</sub>); CHCN, CH<sub>2</sub>N<sub>4</sub>; CH<sub>2</sub>NHCH<sub>3</sub>; CH<sub>2</sub>NHCH<sub>3</sub>; CH<sub>3</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier

Claim 40 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 10 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylasis of hepatitis C-infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (8-to or 8-to of the formula:

wherein

Base is



R\* and R\* are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl-or arylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R\* or R\* is independently H or phosphate; R\* and R\* can also be linked with evelic phosphate group.

R<sup>3</sup> and R<sup>2</sup> are independently H, halogen including F, Cl, Br, I, OH, OR, SH, SR, NH<sub>2</sub>, NHR, NR<sup>2</sup>, lower alkyl of G<sub>3</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>; CO<sub>2</sub>H, CO<sub>2</sub>R, CONH<sub>2</sub>, CONHR, CONR<sup>2</sup><sub>2</sub>; CH=CHCOH, CH=CHCOH, CH=CHCOH, and

R<sup>∞</sup> is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>, optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>, or optionally substituted acyl;

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or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable earrier

Claim 41 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 11 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of hepatitis C infection comprising administering to a host an antivirally effective amount of a (2/R) 2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D) or its pharmaceutically acceptable salt or prodrug thereof of the formula:

optionally in a pharmaceutically acceptable carrier.

Claims 42-45 (Canceled).

Claim 46 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 1 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier a (2/R)-2 deoxy-2 fluoro-2 C methyl nucleoside (B-D or B-L) of the formula:

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wherein

Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH<sub>2</sub>, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or I;

R³ and R² are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or-D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other-pharmaceutically acceptable leaving group-which when administered in vivo is capable of providing a compound wherein R⁴ is H or phosphate, R² is H or phosphate, R² and R² or R² can also be linked with cyclic phosphate group;

R<sup>2</sup> and R<sup>2</sup> are independently H, C<sub>1-1</sub> alkyl, C<sub>1-1</sub> alkenyl, C<sub>1-1</sub> alkynyl, vinyl, N<sub>31</sub>

CN, Cl, Br, F, L, NO<sub>2</sub> C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkynyl), C(O)O(C<sub>1-4</sub> alkynyl), C(C<sub>1-4</sub> alkyl), O(C<sub>1-4</sub> alkynyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkynyl), SO(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), NH(C<sub>1-4</sub> alkyl), NH(C<sub>1-4</sub> alkyl), NH(C<sub>1-4</sub> alkynyl), N

to three halogen (CL, Br, F, 1), NO<sub>2</sub>,C(O)O(C<sub>1+</sub> alky1), C(O)O(C<sub>1+</sub> alky1), C(O)O(C<sub>1+</sub> alkyny1), C(O)O(C<sub>1+</sub> alkeny1), O(C<sub>1+</sub> alkyny1), O(C<sub>1+</sub> alkyny1), S(C<sub>1+</sub> alkyny1), S(C<sub>1+</sub> alkyny1), S(C<sub>1+</sub> alkyny1), S(C<sub>1+</sub> alkyny1), S(C<sub>1+</sub> alkyny1), SO(C<sub>1+</sub> alkyny1), SO(C<sub>1+</sub> alkyny1), SO(C<sub>1+</sub> alkyny1), SO(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), SO<sub>2</sub>(C<sub>1+</sub> alkyny1), NO<sub>2</sub>(C<sub>1+</sub> alkyny1), NH<sub>2</sub>, NH<sub>1</sub>C<sub>1+</sub> alkyny1), NH<sub>2</sub>, NH<sub>2</sub>, NH<sub>2</sub>, alkyny1), A

R<sup>6</sup> is an optionally substituted alkyl (including-lower-alkyl), cyano (CN), CH<sub>2</sub>, OCH<sub>3</sub>, OCH<sub>3</sub>, CH<sub>4</sub>, hydroxy-methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido (N<sub>3</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>5</sub>NH<sub>4</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>4</sub>)<sub>3</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 47 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 46.

wherein Base is selected from the group consisting of:

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R<sup>2</sup>, R<sup>4</sup>, and R<sup>5</sup> are independently H, halogen including F, CI, Br, I, OH, OR.', SH, SR.', NH<sub>2</sub>, NHR', NR-<sub>2</sub>, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, CI, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHC<sub>1</sub>, halogenated (F, CI, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHC<sub>1</sub>, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as CaCH, halogenated (F, CI, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>3</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, CI, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H<sub>2</sub>-CO<sub>2</sub>H<sub>2</sub>-CO<sub>3</sub>H<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONR-<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R', and.

R' is an optionally substituted alkyl-of C<sub>1</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>62</sub> optionally-substituted lower-alkenyl-of C<sub>2</sub>-C<sub>62</sub> or optionally-substituted acyl-

Claim 48 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier

The method of claim 46, wherein

Base is selected from the group consisting of (a) or (b):

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and wherein  $R^4$  is H,  $R^2$  is OH,  $R^2$  is H,  $R^3$  is H, and  $R^4$  is NH<sub>2</sub> or OH, and  $R^3$  is NH<sub>2</sub>:

Claim 49 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a thinovirus infection comprising administering to a host an autivirally effective amount of the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-(--methyl nucleoside (B-D or B-L) of the formula-

wherein

Base is selected from the group consisting of

Y is Nor-CH:

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phonyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl-sulfonyl, including methanosulfonyl and

benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L. or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>4</sup> is H or phosphate; R<sup>3</sup> is H or phosphate; R<sup>3</sup> and R<sup>2</sup> or R<sup>7</sup> can also be linked with cyclic phosphate group;

R2 and R2 are independently H. C14 alkyl, C14 alkenyl, C14 alkynyl, vinyl, N45 CN-Cl-Br-F-L-NO-C(O)O(Cs\_allkvl)-C(O)O(Cs\_allkvl)-C(O)O(Cs\_all alkynyl),  $C(O)O(C_{+,-}alkenyl)$ ,  $O(C_{+,-}aovl)$ ,  $O(C_{+,-}alkyl)$ ,  $O(C_{+,-}alkenyl)$ ; S(Calabort), S(Calabkyt), S(Calabkyryt), S(Calabkyryt), SO(Calabeyt), SO(Calabeyt), SO(C, alkyl) SO(C, alkynyl) SO(C, alkenyl) SO(C, acyl) SO<sub>2</sub>(C<sub>La</sub> alkvl), SO<sub>2</sub>(C<sub>La</sub> alkvnvl), SO<sub>2</sub>(C<sub>La</sub> alkenvl), O<sub>2</sub>S(C<sub>La</sub> acvl), O2S(C1\_alkyl), O3S(C1\_alkenyl), NH2\_NH(C1\_alkyl), NH(C1\_alkenyl), NH(C1., alkynyl), NH(C1., acvl), N(C1., alkyl), N(C1., acvl), wherein alkyl alkynyl alkenyl and vinyl are optinally substituted by N. CN one to three halogen (Cl. Br. F. D. NO. C(O)O(C., alkvl). C(O)O(C., alkvl). C(O)O(C, alkynyl), C(O)O(C, alkenyl), O(C, acvl), O(C, alkyl), O(C1 alkenvl) S(C1 acvl) S(C1 alkvl) S(C1 alkvnvl) S(C1) alkenyl), SO(C1,4 acyl), SO(C1,4 alkyl), SO(C1,4 alkynyl), SO(C1,4 alkenyl) SO-(C., acvl) SO-(C., alkvl) SO-(C., alkvnvl) SO-(C., afkenyl), OaS(Caaracyl), OaS(Caaralkyl), OaS(Caaralkenyl), NHar NH(Caar alkyl) NHCs., alkenyl) NHCs., alkynyl) NHCs., acyl) NCs., alkyl); N(C\_aovI). OR7-R2 and R2 can be linked together to form a vinyl ontionally substituted by one or two of N. CN CL Br F 1 NO:

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl. Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>3</sub>·C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>4</sub>·C<sub>6</sub> such as CF<sub>3</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>·C<sub>6</sub> such as CH=CHC<sub>4</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>·C<sub>6</sub> such as CH=CHC<sub>4</sub>, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>·C<sub>6</sub> such as

CsiCH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>3</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R',

R'-is an optionally-substituted alkyl-of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl-is an amino acid residue), eyeloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>6</sub>; optionally-substituted lower alkenyl-of C<sub>2</sub>-C<sub>6</sub>, or optionally-substituted acyl-

R<sup>6</sup>-is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH<sub>3</sub>;

OCH<sub>3</sub>; OCH<sub>3</sub>; CH<sub>3</sub>, hydroxy-methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
(N<sub>5</sub>), CHGN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne
(optionally substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 50 (Withdrawn; Currently Amended). A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 49, wherein

Base is

and  $R^3$  is H,  $R^2$  is OH,  $R^3$  is H,  $R^3$  is H,  $R^4$  is NH, or OH, and  $R^6$  is H

Claim 51 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 6 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a thinovirus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-('-methy) nucleoside (B-D or B-L) or its pharmaceutically acceptable salt or prodrug thereof of the structure:

wherein Base is a purine or pyrimidine base;

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F, Cl. Br, or I, and

 $\boldsymbol{R}^{\boldsymbol{\delta}}$  and  $\boldsymbol{R}^{\boldsymbol{\delta}}$  are independently H, phosphate, including monophosphate,

diphosphate, triphosphate, or a stabilized phosphate predrug. Hphosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>2</sup> can also be linked with cyclic phosphate group and optionally a pharmaceutically acceptable carrier.

Claim 52 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 7 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim-51, wherein

Base is selected from the group consisting of:

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 

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R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H<sub>2</sub> halogen including F<sub>2</sub> CL<sub>2</sub> Br<sub>2</sub> L, OH<sub>2</sub> OR<sup>2</sup>, SH<sub>3</sub> SR<sup>2</sup>, NH<sub>2</sub>, NHR<sup>2</sup>, NR<sup>2</sup><sub>2</sub>, lower alkyl of C<sub>4</sub> C<sub>6</sub>, halogenated (F, Cl<sub>2</sub> Br<sub>2</sub> L) lower alkenyl of C<sub>2</sub> C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F<sub>2</sub> Cl<sub>3</sub> Br<sub>4</sub> L) lower alkenyl of C<sub>2</sub> C<sub>6</sub> such as CH=CHCl<sub>4</sub> CH=CHBr and CH=CHI<sub>1</sub>, lower alkynyl of C<sub>2</sub> C<sub>6</sub> such as C=CH, halogenated (F<sub>2</sub> Cl<sub>4</sub> Br<sub>4</sub> L) lower alkynyl of C<sub>2</sub> C<sub>6</sub> lower alkonyl of C<sub>3</sub> C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F<sub>2</sub> Cl<sub>4</sub> Br<sub>4</sub> L) lower alkonyl of C<sub>4</sub> C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F<sub>2</sub> Cl<sub>4</sub> Br<sub>4</sub> L) lower alkonyl of C<sub>4</sub> C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F<sub>2</sub> Cl<sub>4</sub> Br<sub>4</sub> L) lower alkonyl of C<sub>4</sub> Ch<sub>4</sub> Ch<sub>4</sub> Ch<sub>4</sub> Ch<sub>5</sub> Ch<sub>4</sub> CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>3</sub>, CONH<sub>4</sub>, CONH<sub>4</sub>

R<sup>\*</sup> is an optionally substituted alkyl-of-C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl-is an amino acid residue), eyeloalkyl, optionally substituted alkynyl-of-C<sub>2</sub>-C<sub>6</sub>; optionally-substituted lower alkenyl-of-C<sub>2</sub>-C<sub>6</sub>; or optionally substituted acyl-

Claim 53 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 8 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 51, wherein

Base is selected from the group consisting of (a) or (b):

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 

and wherein  $\mathbf{R}^4$  and  $\mathbf{R}^7$  are  $\mathbf{H}_1$   $\mathbf{R}^3$  is  $\mathbf{H}_2$  and  $\mathbf{R}^4$  is NH2 or OH, and  $\mathbf{R}^8$  is NH2.

Claim 54 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D or B-L) of the formula:

wherein

Base is

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or recemic), C(W)<sub>2</sub>, wherein W is F<sub>1</sub> Cl.-Be-or-l-

R<sup>3</sup>-and-R<sup>2</sup>-are independently-H<sub>2</sub>-phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phonyl-and-lower-acyl, alkyl, including lower-alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phonyl group is optionally substituted, a lipid, including a phospholipid, an t-or-D-amino acid (or racemic mixture), a earbohydrate, a peptide, a cholesterol, or other-pharmaceutically acceptable leaving group-which when administered in vivo is capable of providing a compound wherein R<sup>3</sup> is H or phosphate; R<sup>2</sup> is H or phosphate, R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group.

R<sup>3</sup>-and R<sup>2</sup> are-independently H, C<sub>1-1</sub>-alkyl, C<sub>1-1</sub>-alkenyl, C<sub>1-1</sub>-alkynyl, vinyl, N<sub>37</sub>

CN, Cl, Br, F, L, NO<sub>2</sub>-C(O)O(C<sub>1-4</sub>alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkynyl), C(O)O(C<sub>1-4</sub> alkynyl), C(C<sub>1-1</sub>-alkynyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkynyl), S(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), NH<sub>1</sub>C<sub>1-4</sub> alkynyl), NH<sub>1</sub>C<sub>1-4</sub> alkynyl), NH<sub>2</sub> NH<sub>1</sub>C<sub>1-4</sub> alkyl), NH<sub>1</sub>C<sub>1-4</sub> alkynyl), NH<sub>2</sub> NH<sub>3</sub>C<sub>1-4</sub> alkyl), NH<sub>4</sub>C<sub>1-4</sub> alkynyl, NH<sub>4</sub>C<sub>1-4</sub> alkynyl, NH<sub>4</sub>C<sub>1-4</sub> alkynyl, NH<sub>4</sub>C<sub>1-4</sub> alkynyl, NH<sub>4</sub>C<sub>1-4</sub> alkynyl, NH<sub>4</sub>C<sub>1-4</sub> alkyl), NC<sub>1-4</sub> alkyl), NC<sub>1-4</sub> alkyl), NH<sub>2</sub>C<sub>1-4</sub> alkyl), NH<sub>3</sub>C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub>

$$\begin{split} &O(C_{1-\epsilon}\text{alkenyl}), S(C_{1-\epsilon}\text{acyl}), S(C_{1-\epsilon}\text{alkyl}), S(C_{1-\epsilon}\text{alkynyl}), S(C_{1-\epsilon}\text{alkynyl}), S(C_{1-\epsilon}\text{alkynyl}), SO(C_{1-\epsilon}\text{alkynyl}), SO(C_{1-\epsilon}\text{alkynyl}), SO_2(C_{1-\epsilon}\text{alkynyl}), SO_2(C_{1-\epsilon}\text{alky$$

R<sup>1</sup> and R<sup>1</sup> are independently H, halogen including F, Cl, Br, I, OH, OR., SH, SR., NH<sub>2</sub>, NHR., NR., lower alkyl of C<sub>3</sub>. C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>. C<sub>6</sub> such as CH<sub>2</sub> and CH<sub>2</sub>CH<sub>3</sub>F, lower alkenyl of C<sub>2</sub>. C<sub>6</sub> such as CH=CH<sub>3</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>. C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>. C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>. C<sub>6</sub>, lower alkony of C<sub>4</sub>. C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkony of C<sub>4</sub>. C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkony of C<sub>4</sub>. C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R., CONH<sub>2</sub>, CONH<sub>2</sub>, CONR., CH=CHCO<sub>3</sub>R.

R' is an optionally substituted alkyl of C<sub>4</sub>-C<sub>52</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>60</sub> optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>60</sub> or optionally-substituted acyl;

R<sup>6</sup> is an optionally substituted alkyl (including lower alkyl), eyano (CN), CH<sub>3</sub>; OCH<sub>3</sub>, OCH<sub>2</sub>CH<sub>4</sub>; hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>; CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>3</sub>; CH<sub>2</sub>N(CH3)<sub>2</sub>; alkyne (optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier

Claim 55 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the

nucleoside of claim 10 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of a (2'R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (B-D or B-L) of the formula:

wherein

Base is

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylatkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>2</sup> can also be linked with cyclic phosphate group;

R³ and R⁴ are independently H, halogen including F, Cl, Br, I, OH, OR¹, SH, SR⁻, NH₂, NHR¹, NR¹, lower alkyl of C₄-C₅, halogenated (F, Cl, Br, I) lower

alkyl-of  $C_2$ - $C_6$ -such as  $CF_2$  and  $CH_2$ CH<sub>2</sub>F, lower alkenyl-of  $C_2$ - $C_6$ -such as CH= $CH_2$ -halogenated (F, Cl, Br, I) lower alkenyl-of  $C_2$ - $C_6$ -such as CH=CHCl, CH=CHBF and CH=CHI, lower alkynyl-of  $C_2$ - $C_6$ -such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl-of  $C_2$ - $C_6$ -lower alkoxy-of  $C_4$ - $C_6$ -such as  $CH_2OH$ -and  $CH_2OH$ -halogenated (F, Cl, Br, I) lower alkoxy-of  $C_4$ - $C_6$ - $C_6$ - $C_0$ - $C_6$ -

R2 is an optionally-substituted alkyl-of C<sub>4</sub>·C<sub>42</sub> (particularly-when the alkyl-io an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>·C<sub>65</sub> optionally-substituted lower alkenyl-of C<sub>2</sub>·C<sub>65</sub> or optionally-substituted nevl-

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 56 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 11 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a rhinovirus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-('-methyl nucleoside (8-D) or its pharmaceutically acceptable salt or produte thereof of the formula:

ontionally in a pharmaceutically acceptable carrier.

# Claims 57-60 (Canceled).

Claim 61 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 1 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier\_a (2'R)-2'-deoxy-2'-fluoro-2'-f--methyl nucleoside (β-b or β-b- of the formula:

wherein

Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F, Cl. Be, or I;

R<sup>3</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate,

diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally-substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, au L-or-D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> is H or phosphate, R<sup>2</sup> is H or phosphate, R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked-with cyclic-phosphate group;

> R2 and R2 are independently H, C1-ralkyl, C1-ralkenyl, C1-ralkynyl, vinyl, N2-CN, Cl. Br. F. I, NO2, C(O)O(C1.4 alkyl), C(O)O(C1.4 alkyl), C(O)O(C1.4 alkynyl) C(O)O(C, alkenyl) O(C, acvl) O(C, alkyl) O(C, alkenyl) S(CL, acvi), S(CL, aikvi), S(CL, aikvnvl), S(CL, aikenvl), SO(CL, acvi), SO(C\_alkyl)-SO(C\_alkynyl)-SO(C\_alkenyl)-SO(C\_alkenyl) SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkenyl), O<sub>4</sub>S(C<sub>1-4</sub> acyl), OaS(Caralkyl) OaS(Caralkenyl) NHz NH(Caralkyl) NH(Caralkenyl) NH(C1\_alkynyl)\_NH(C1\_acyl)\_N(C1\_alkyl)\_N(C1\_bacyl)\_wherein alkyl, alkynyl, alkenyl and vinyl are optinally substituted by Na, CN, one to three halogen (Cl. Br. F. I). NO2 C(O)O(C, alkyl), C(O)O(C, alkyl). C(O)O(C3...alkynyl), C(O)O(C4...alkenyl), O(C4.ancyl), O(C3...alkyl), O(C\_ alkenyl) S(C\_ acyl) S(C\_ alkyl) S(C\_ alkynyl) S(C\_ alkenyl), SO(CL, acvl), SO(CL, alkvl), SO(CL, alkvnyl), SO(CL, alkenyl), SO<sub>2</sub>(C<sub>Ld</sub> acyl), SO<sub>2</sub>(C<sub>Ld</sub> alkyl), SO<sub>2</sub>(C<sub>Ld</sub> alkynyl), SO<sub>2</sub>(C<sub>Ld</sub> alkenvi), OaS(Caa acvi), OaS(Caa alkvi), OaS(Caa alkenvi), NHa, NH(Caa alkyl), NH(C\_\_alkenyl), NH(C\_\_alkynyl), NH(C\_\_acyl), N(C\_\_alkyl), N(C<sub>1,2</sub> acvl)<sub>2</sub>: OR<sup>2</sup>: R<sup>2</sup> and R<sup>2</sup> can be linked together to form a vinvi optionally substituted by one or two of Na, CN, CL Br. F. L NO2-R6 is an optionally substituted alkyl (including lower alkyl), evano (CN), CN2,

> R\* is an optionally substituted alkyl (including lower alkyl), eyano (CN), CH<sub>2</sub>;
>
> OCH<sub>2</sub>, OCH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
> (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>2</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>4</sub>)<sub>2</sub>, alkyne
> (optionally substituted), or fluoro;

or its pharmaceutically-acceptable saft-or-produig thereof-optionally in a pharmaceutically acceptable carrier:

Claim 62 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 61,

wherein Base is selected from the group consisting of

#### Y is N or CH.

R<sup>3</sup>, R<sup>4</sup> and R<sup>8</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>3</sub>, lower alkyl of C<sub>4</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>4</sub>-C<sub>6</sub> such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>H, CO<sub>3</sub>H, CONH<sub>2</sub>, CONH<sub>3</sub>, CONH<sub>4</sub>, CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>3</sub>R', and,

R' is an optionally-substituted alkyl-of C<sub>4</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>62</sub> optionally-substituted-lower alkenyl-of C<sub>2</sub>-C<sub>62</sub>, or optionally-substituted acyl.

Claim 63 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 61, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^4$  is H,  $R^2$  is OH,  $R^2$  is H,  $R^3$  is H, and  $R^4$  is NH, or OH, and  $R^3$  is NH.

Claim 64 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D-or-β-L) of the formula:

wherein

Base is selected from the group consisting of

Y is N or CH:

R<sup>2</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in tivo is capable of providing a compound wherein R<sup>1</sup> is H or phosphate, R<sup>2</sup> is H or phosphate; R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group.

R<sup>2</sup> and R<sup>3</sup> are independently H, C<sub>1-4</sub> alkyl, C<sub>4-4</sub> alkenyl, C<sub>1-4</sub> alkynyl, vinyl, N<sub>3</sub>;

CN, Cl, Br, F, I, NO<sub>2</sub>, C(O)O(C<sub>4-4</sub> alkyl), C(O)O(C<sub>4-4</sub> alkyl), C(O)O(C<sub>4-4</sub> alkyl), C(O)O(C<sub>4-4</sub> alkyl), O(C<sub>4-4</sub> alkyl), O(C<sub>4-4</sub> alkyl), O(C<sub>4-4</sub> alkyl), O(C<sub>4-4</sub> alkyl), O(C<sub>4-4</sub> alkyl), S(C<sub>4-4</sub> alkyl), S(C<sub>4-4</sub> alkyl), S(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), SO<sub>4</sub>(C<sub>4-4</sub> alkyl), NO<sub>4</sub>(C<sub>4-4</sub> alkyl), NO<sub>4</sub>

$$\begin{split} &C(O)O(C_{1-4}\text{alkynyl}),\ C(O)O(C_{1-4}\text{alkenyl}),\ O(C_{1-4}\text{alkynyl}),\ C(C_{1-4}\text{alkyl}),\ C(C_{1-4}\text{alkynyl}),\ S(C_{1-4}\text{alkyl}),\ S(C_{1-4}\text{alkynyl}),\ S(C_{1-4}\text{alkynyl}),\ S(C_{1-4}\text{alkynyl}),\ S(C_{1-4}\text{alkynyl}),\ SO(C_{1-4}\text{alkynyl}),\ SO_2(C_{1-4}\text{alkynyl}),\ SO_2(C_{1-4}\text{a$$

- R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently Hi, halogen including F, Cit, Br, I, OH, OR<sup>2</sup>, SH, SR<sup>2</sup>, NH<sub>2</sub>, NHR<sup>2</sup>, NR<sup>2</sup><sub>3</sub>, lower alkyl of C<sub>1</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>2</sub>, C<sub>6</sub>, such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>, C<sub>6</sub> such as CH=CHC<sub>1</sub>, talogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>, C<sub>6</sub>, such as CH=CHC<sub>1</sub>, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>H, CO<sub>3</sub>H, CONH<sub>2</sub>, CONHR<sup>2</sup>, CONHR<sup>2</sup>, CONHR<sup>2</sup>, CONHR<sup>2</sup>, CH=CHCOJH, CH=CHCOJR<sup>2</sup>.
- $R^2$  is an optionally substituted alkyl of  $C_1$ - $C_{12}$  (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of  $C_2$ - $C_{67}$  optionally substituted lower alkenyl of  $C_2$ - $C_{67}$  or optionally substituted acyl:
- R<sup>6</sup>-is-an optionally-substituted alkyl-(including-lower-alkyl), cyano (CN), CH<sub>2c</sub>

  OCH<sub>2</sub>, OCH<sub>3</sub>CH<sub>3</sub>, hydroxy-methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
  (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>4</sub>, CH<sub>2</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>3</sub>, alkyne
  (optionally-substituted), or fluoro:

or its pharmacoutically acceptable salt or prodrug thereof, optionally in a pharmacoutically acceptable carrier.

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Claim 65 (Withdrawn, Currently Amended). A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 64, wherein

#### Base is

and R4 is H. R2 is OH, R2 is H. R2 is H. R4 is NH2 or OH, and R6 is H.

Claim 66 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 6 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (fi-D or fi-L) or its pharmaceutically acceptable salt or prodrug thereof of the structure.

wherein Base is a purine or pyrimidine base;

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or L and.

R<sup>4</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonates, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>4</sup> or R<sup>2</sup> is independently H-or phosphate; R<sup>3</sup> and R<sup>2</sup> can also be linked with cyclic phosphate group and

optionally in a pharmaceutically acceptable carrier-

Claim 67 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 7 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 66, wherein

Base is selected from the group consisting of

Y is Nor CH

R<sup>3</sup>, R<sup>4</sup> and R<sup>3</sup> are independently H, halogen including F, Cl. Br, I, OH, OR, SH, SR, NHR, NHR, NR3, lower alkyl of C<sub>1</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I)

lower alkyl-of C<sub>4</sub>-C<sub>6</sub>-such as CF<sub>3</sub> and CH<sub>2</sub>CH<sub>2</sub>F. Jower alkenyl-of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHC<sub>3</sub>-halogenated (F, Cl. Br, I) lower alkenyl-of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>-such as C=CH, halogenated (F, Cl. Br, I) lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>, Jower alkoxy of C<sub>4</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl. Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>-CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R', and;

R2 is an optionally-substituted alkyl-of C<sub>4</sub>. C<sub>42</sub> (particularly-when the alkyl-is an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>. C<sub>65</sub> optionally-substituted-lower-alkenyl-of C<sub>2</sub>. C<sub>65</sub> or optionally substituted acyl-

Claim 68 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylaxis</u> of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 8 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim-66, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^4$  and  $R^7$  are  $H_r\,R^4$  is  $H_r$  and  $R^4$  is NH  $_2$  or OH, and  $R^5$  is NH  $_2$ 

Claim 69 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-(-'methyl nucleoside (β-D or β-L) of the formula:

wherein

Base is

X is O. S. CH<sub>2</sub>, Se, NH. N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl. Br, or t:

R<sup>2</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl. O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t-or-D-amino acid (or-racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of

providing a compound wherein  $R^{1}$  is H or phosphate;  $R^{2}$  is H or phosphate;  $R^{1}$  and  $R^{2}$  or  $R^{2}$  can also be linked with cyclic phosphate group.

R3 and R3 are independently H. C., alkyl. C., alkenyl. C., alkynyl. vinyl. No. CN-Cl-Br-F-L-NO2-C(O)O(C1-4 afkvl)-C(O)O(C1-4 afkvl)-C(O)O(C1-4 alkynyl), C(O)O(C1...; alkenyl), O(C1...; acvl), O(C1...; alkyl), O(C1...; alkenyl), S(C\_\_acvl)\_S(C\_\_alkvl)\_S(C\_\_alkvnvl)\_S(C\_\_alkenvl)\_S(C\_\_acvl)\_ SO(C\_\_alkvl)\_SO(C\_\_alkvnvl)\_SO(C\_\_alkenvl)\_SO(C\_\_acvl)\_ SO<sub>2</sub>(C<sub>1,2</sub> alkv1), SO<sub>2</sub>(C<sub>1,2</sub> alkvnv1), SO<sub>2</sub>(C<sub>1,2</sub> alkenv1), O<sub>2</sub>S(C<sub>1,2</sub> aev1), OsS(Ca., alkyl), OsS(Ca., alkenyl), NH, NH(Ca., alkyl), NH(Ca., alkenyl), NH(Ca.anikynyl)-NH(Ca.anovl)-N(Ca.anikyl)z-N(Ca.anicyl)z-wherein alkyl-alkynyl-alkenyl and vinyl are optinally substituted by N<sub>2</sub> CN one to three halogen (Cl. Br. F. D. NO. C(O)O(Ca. alkyl), C(O)O(Ca. alkyl), C(O)O(C2.4alkvnvl); C(O)O(C2.4alkenvl); O(C2.4acvl); O(C3.4alkvl); O(C1\_alkenvl), S(C1\_acvl), S(C1\_alkvl), S(C1\_alkvnvl), S(C1\_a alkenyl) SOCC, acyl) SOCC, allevi) SOCC, alleviyl) SOCC, alkenyl), SO<sub>2</sub>(C<sub>1</sub>, acyl), SO<sub>2</sub>(C<sub>1</sub>, alkyl), SO<sub>2</sub>(C<sub>1</sub>, alkynyl), SO<sub>2</sub>(C<sub>1</sub>, alkenvl). O2S(C2\_a acvl). O2S(C1\_a alkvl). O2S(C3\_a alkenvl). NH2. NH(C1\_a alkyl) NH(C\_\_alkenyl) NH(C\_\_alkynyl) NH(C\_\_acyl) N(C\_aalkyl) N(C), acv1). OR7-R3 and R2 can be linked together to form a vinvi optionally substituted by one or two of N., CN, Cl. Br. F. I. NO.:

R<sup>3</sup> and R<sup>4</sup> are independently H, halogen including F; Cl<sub>7</sub> Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of G<sub>3</sub>-C<sub>6</sub>, halogenated (F, Cl<sub>7</sub> Br, I) lower alkyl of C<sub>4</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl<sub>7</sub> Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl<sub>3</sub>, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl<sub>4</sub>, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH<sub>2</sub> halogenated (F, Cl<sub>7</sub> Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, tower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl<sub>7</sub> Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R'.

R<sup>\*</sup> (s an optionally substituted alkyl of C<sub>1</sub>, C<sub>2</sub>, (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>, C<sub>6</sub>; optionally substituted lower alkenyl of C<sub>2</sub>, C<sub>6</sub>; or optionally substituted nevl.

R° is an optionally substituted alkyl (including lower alkyl), eyano (CN), CH<sub>a</sub>; OCH<sub>a</sub>; OCH<sub>a</sub>; H<sub>a</sub>, hydroxy methyl (CH<sub>a</sub>OH), fluoromethyl (CH<sub>a</sub>F), azido (N<sub>3</sub>); CHCN, CH<sub>a</sub>N<sub>a</sub>; CH<sub>a</sub>NH<sub>4</sub>; CH<sub>a</sub>NHCH<sub>a</sub>; CH<sub>a</sub>N(CH<sub>a</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or produg-thereof, optionally-in a pharmaceutically acceptable carrier.

Claim 70 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 10 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) of the formula:



wherein Base is



R\* and R\* are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl-or acylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R\* or R\* is independently H or phosphate; R\* and R\* can also be linked with evelic phosphate group.

R<sup>3</sup> and R<sup>2</sup> are independently H, halogen including F, Cl, Br, L, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>3</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as CH<sub>2</sub>-CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>; CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>; CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R'.

R<sup>\*</sup> is an optionally-substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl is an amino acid residue), cycloalkyl, optionally-substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>; optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>; or optionally-substituted acyl;

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or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 71 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 11 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a yellow fever virus infection comprising administering to a host an autivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (B-D) or its pharmaceutically acceptable salt or prodrug thereof of the formula:

optionally in a pharmaceutically acceptable carrier.

Claims 72-75 (Canceled).

Claim 76 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 1 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

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a (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (8-D or 8-L) of the formula:

wherein

Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl. Br, or I;

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid; including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in trivo is capable of providing a compound wherein R<sup>4</sup> is H or phosphate; R<sup>2</sup> is H or phosphate, R<sup>4</sup> and R<sup>2</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group;

$$\begin{split} R^2 \text{ and } R^3 \text{-are independently H, } C_{3-1}\text{-alkeyl}, C_{3-1}\text{-alkenyl}, C_{4-1}\text{-alkynyl}, vinyl}, N_{32} \\ & CN_1 Cl_1 Br. F_1 I_1 NO_2 C(O)O(C_{3-4}\text{-alkyl}), C(O)O(C_{4-4}\text{-alkyl}), C(O)O(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), C(C_{4-4}\text{-alkyl}), SO(C_{4-4}\text{-alkyl}), SO(C_{4-4}\text{-alkynyl}), SO(C_{4-4}\text{-alkynyl}), SO_2(C_{4-4}\text{-alkyl}), SO_2(C_{4-4}\text{-alkynyl}), SO_2(C_{4-4}\text{-alkynyl}), SO_2(C_{4-4}\text{-alkynyl}), SO_2(C_{4-4}\text{-alkynyl}), NII(C_{4-4}\text{-alkynyl}), NII(C_{4-4}\text{-alkynyl}),$$

alkyn, alkenyl, alkenyl and vinyl are optinally substituted by  $N_a$ ,  $CN_c$ , one to three halogen (CL, Br, F, I),  $NO_a$ ,  $C(O)O(C_{L+}$  alkyl),  $C(O)O(C_{L+}$ 

R<sup>6</sup> is an optionally substituted alkyl (including lower alkyl), eyano (CN), CH<sub>2</sub>,
OCH<sub>2</sub>-OCH<sub>2</sub>-CH<sub>4</sub>, bydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
(N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>2</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>4</sub>)<sub>3</sub>, alkyne
(optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 77 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 76:

wherein Base is selected from the group consisting of

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 

#### Y is Nor CH.

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl. Br, I, OH, OR.; SH, SR.; NH<sub>3</sub>, NHR.; NR<sub>2</sub>, lower alkyl of C<sub>4</sub>-C<sub>6</sub>; halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R<sup>2</sup>, CONH<sub>2</sub>, CONHR<sup>2</sup>, CONR<sup>2</sup><sub>3</sub>; CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R<sup>2</sup>, and.

R' is an optionally-substituted alkyl-of-C<sub>1</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid residue), cycloalkyl, optionally-substituted alkynyl-of-C<sub>2</sub>-C<sub>65</sub>, optionally-substituted-lower-alkenyl-of-C<sub>2</sub>-C<sub>65</sub>, or optionally-substituted acyl.

Claim 78 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylasis</u> of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 76, wherein

Base is selected from the group consisting of (a) or (b):

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^3$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^5$ 

and wherein  $R^4$  is H,  $R^2$  is OH,  $R^2$  is H,  $R^3$  is H, and  $R^4$  is NH<sub>2</sub> or OH, and  $R^3$  is NH<sub>2</sub>:

Claim 79 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of a (2'R) 2' deoxy-2'-fluoro-2' C' methyl nucleoside (B-D) of the formula:

wherein

Base is selected from the group consisting of

Y is Nor CH;

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl-sulfonyl, including methanesulfonyl and

benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t. or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>4</sup> is H or phosphate; R<sup>3</sup> is H or phosphate; R<sup>3</sup> and R<sup>2</sup> or R<sup>7</sup> can also be linked with cyclic phosphate group;

R<sup>3</sup> and R<sup>22</sup> are independently H. C., alkyl. C., alkenyl. C., alkynyl. vinyl. No. CN. Cl. Br. F. L. NO. C(O)O(Ca., alkvl). C(O)O(Ca., alkvl). C(O)O(Ca., alkynyl),  $C(O)O(C_{+,-}alkenyl)$ ,  $O(C_{+,-}aovl)$ ,  $O(C_{+,-}alkyl)$ ,  $O(C_{+,-}alkenyl)$ , S(Calabort), S(Calabkyt), S(Calabkyryt), S(Calabkyryt), SO(Calabeyt), SO(Calabeyt), SO(C, alkyl) SO(C, alkynyl) SO(C, alkenyl) SO(C, acyl) SO<sub>2</sub>(C<sub>La</sub> alkvl), SO<sub>2</sub>(C<sub>La</sub> alkvnvl), SO<sub>2</sub>(C<sub>La</sub> alkenvl), O<sub>2</sub>S(C<sub>La</sub> acvl), O2S(C1\_alkyl), O2S(C1\_alkenyl), NH2\_NH(C1\_alkyl), NH(C1\_alkenyl), NH(C1., alkynyl), NH(C1., acvl), N(C1., alkyl), N(C1., acvl), wherein alkyl alkynyl alkenyl and vinyl are optinally substituted by N. CN one to three halogen (Cl. Br. F. D. NO. C(O)O(C., alkvl). C(O)O(C., alkvl). C(O)O(C\_aalkynyl), C(O)O(C\_aalkenyl), O(C\_aaevl), O(C\_aalkyl), O(C1 alkenvl) S(C1 acvl) S(C1 alkvl) S(C1 alkvnvl) S(C1) alkenyl), SO(C1.4-acyl), SO(C1.4-alkyl), SO(C1.4-alkynyl), SO(C1.4 alkenyl) SO-(C., acvl) SO-(C., alkvl) SO-(C., alkvnvl) SO-(C., afkenyl), OaS(Caaracyl), OaS(Caaralkyl), OaS(Caaralkenyl), NHar NH(Caar alkyl) NHCs., alkenyl) NHCs., alkynyl) NHCs., acyl) NCs., alkyl); N(C\_aovI) OR7-R2 and R2 can be linked together to form a vinyl ontionally substituted by one or two of N. CN-Cl-Bc-F-1-NO:

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl. Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>2</sub>·C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>·C<sub>6</sub> such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>·C<sub>6</sub> such as CH=CHC<sub>1</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>·C<sub>6</sub> such as CH=CHC<sub>1</sub>, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>·C<sub>6</sub> such as

C:::CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>1</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>;

CH-CHCO<sub>2</sub>H, CH-CHCO<sub>2</sub>R':

R'-is an optionally-substituted alkyl-of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl-is an amino acid residue), eyeloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>6</sub>; optionally-substituted-lower alkenyl-of C<sub>2</sub>-C<sub>6</sub>, or optionally-substituted acyl-

R<sup>6</sup>-is an optionally substituted alkyl-(including-lower-alkyl), cyano (CN), CH<sub>3</sub>;

OCH<sub>3</sub>, OCH<sub>3</sub>CH<sub>3</sub>, hydroxy-methyl-(CH<sub>2</sub>OH), fluoromethyl-(CH<sub>2</sub>F), azido
(N<sub>3</sub>), CHGN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>4</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne
(optionally substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 80 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 79, wherein

Base is

and R' is H, R2 is OH, R2 is H, R3 is H, R4 is NH, or OH, and R6 is H

Claim 81 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 6 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-('-methy) nucleoside (B-D or B-L) or its pharmaceutically acceptable salt or produce thereof of the structure:

wherein Base is a purine or pyrimidine base;

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F; Cl. Br, or I; and

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate;

diphosphate, triphosphate, or a stabilized phosphate prodrug. Hphosphonate, including stabilized H-phosphonates, acyl, including 
optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, 
O-substituted carboxyalkylamino or its peptide derivatives, sulfonate 
ester, including alkyl or arylalkyl-sulfonyl, including methanesulfonyl and 
benzyl, wherein the phenyl group is optionally substituted, a lipid, 
including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, 
a cholesterol, or other pharmaceutically acceptable leaving group which 
when administered in vivo is capable of providing a compound wherein R<sup>3</sup> 
or R<sup>2</sup> is independently H or phosphate; R<sup>3</sup> and R<sup>2</sup> can also be linked with 
cyclic phosphate group, and optionally a pharmaceutically acceptable 
carrier.

Claim 82 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 7 or its pharmaceutically acceptable salt or produig optionally in a pharmaceutically acceptable carrier.

## The method of claim-81, wherein

Base is selected from the group consisting of:

Y is N or GH:

R<sup>3</sup>-R<sup>4</sup> and R<sup>3</sup> are independently H<sub>2</sub> halogen including F<sub>2</sub>-Cl<sub>2</sub>-Br<sub>2</sub>-L, OH<sub>2</sub>-OR<sup>2</sup>-SH<sub>3</sub>-SR<sup>2</sup>-NHR<sup>2</sup>-NHR<sup>2</sup>-NR<sup>2</sup>-1 ower alkyl of C<sub>1</sub>-C<sub>6</sub>-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>-Such as CH=CH<sub>2</sub>-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>-Such as CH=CHCl<sub>2</sub>-CH=CHBr and CH=CHI<sub>1</sub>-lower alkynyl of C<sub>2</sub>-C<sub>6</sub>-Such as C=CH<sub>2</sub>-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>-lower alkonyl of C<sub>3</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkonyl of C<sub>3</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkonyl of C<sub>3</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH-halogenated (F, Cl<sub>2</sub>-Br<sub>2</sub>-1) lower alkonyl of C<sub>3</sub>-C<sub>6</sub>-CO<sub>2</sub>H<sub>2</sub>-CO<sub>3</sub>H<sub>2</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H<sub>3</sub>-CO<sub>3</sub>H

R<sup>2</sup> is an optionally substituted alkyl-of-C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl-is an amino acid residue), eyeloalkyl, optionally substituted alkynyl-of-C<sub>2</sub>-C<sub>6</sub>; optionally-substituted lower alkenyl-of-C<sub>2</sub>-C<sub>6</sub>; or optionally substituted acyl-

Claim 83 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 8 or its pharmaceutically acceptable salt or produig optionally in a pharmaceutically acceptable carrier.

The method of claim 81, wherein

Base is selected from the group consisting of (a) or (b):

$$\mathbb{R}^4$$
 $\mathbb{R}^5$ 
 $\mathbb{R}^5$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 
 $\mathbb{R}^4$ 

and wherein  $R^4$  and  $R^7$  are  $H, R^3$  is H, and  $R^4$  is NH2 or OH, and  $R^8$  is NH2.

Claim 84 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a West-Nile virus infection comprising administering to a host an antivirally effective amount of a (2<sup>1</sup>R)-2<sup>2</sup>-deoxy-2<sup>2</sup>-fluoro-2<sup>2</sup>-C-methyl nucleoside (B-D or B-L) of the formula:

wherein Base is

X is O. S. CH<sub>2</sub>. Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F<sub>1</sub> Cl. Be, or I;

R<sup>3</sup> and R<sup>2</sup> are independently-H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl-and-lower-acyl, alkyl, including lower-alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t-or D-amino acid (or racemic minture), a earbohydrate, a peptide, a cholesterol, or other-pharmaceutically acceptable leaving group-which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> is H or phosphate; R<sup>2</sup> is H or phosphate, R<sup>3</sup> and R<sup>2</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group:

R<sup>2</sup>-and R<sup>2</sup>-are independently H, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkenyl, C<sub>1-4</sub> alkynyl, vinyl, N<sub>2</sub>;

CN, Cl, Br, F, I, NO<sub>2</sub>, C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkynyl), C(O)O(C<sub>1-4</sub> alkenyl), O(C<sub>1-4</sub> alkynyl), O(C<sub>1-4</sub> alkyl), O(C<sub>1-4</sub> alkynyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkynyl), S(C<sub>1-4</sub> alkynyl), SO(C<sub>1-4</sub> alkynyl), SO(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), NH(C<sub>1-4</sub> alkyl), NH(C<sub>1-4</sub> alkynyl), NH(C<sub>1-4</sub> alkyn

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$$\begin{split} & C(O)O(C_{1-\epsilon}\text{alkynyl}), \ C(O)O(C_{1-\epsilon}\text{alkenyl}), \ O(C_{1-\epsilon}\text{alkynyl}), \ C(C_{1-\epsilon}\text{alkynyl}), \ C(C_{1-\epsilon}\text{alkyn$$

- R\*-and R\*-are independently H, halogen including F, Cl, Br, L, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>3</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>4</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONH<sub>3</sub>, CONR'<sub>3</sub>, CH=CHCO<sub>3</sub>H, CH=CHCO<sub>3</sub>R', and
- R' is an optionally substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>-C<sub>67</sub> optionally substituted lower alkenyl of C<sub>2</sub>-C<sub>67</sub> or optionally substituted acyl-
- R<sup>6</sup>-is an optionally-substituted alkyl-(including lower alkyl), cyano (CN), CH<sub>3</sub>,
  OCH<sub>2</sub>, OCH<sub>2</sub>CH<sub>3</sub>, hydroxy-methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>P), azido
  (N<sub>4</sub>), CHCN, CH<sub>2</sub>N<sub>4</sub>, CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>5</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne
  (optionally-substituted), or fluoro;

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 85 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylaxis</u> of a West Nile virus infection comprising administering to a host an antivirally effective amount

of the nucleoside of claim 10 or its pharmaceutically acceptable salt or produig optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of a (2'R)-2'-deoxy-2'-fluoro-2'-C'-methyl nucleoside (B-D or B-L) of the formula:

wherein

Base is

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylatkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a-peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>1</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>1</sup> and R<sup>2</sup>-can also be linked with cyclic phosphate group;

R³ and R⁴ are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR; NH₂, NHR¹, NR¹₂, lower alkyl of C₄-C₅, halogenated (F, Cl, Br, I) lower

alkyl-of  $C_3$ - $C_6$ -such as  $CF_2$  and  $CH_2$ CH<sub>2</sub>F, lower alkenyl-of  $C_2$ - $C_6$  such as CH= $CH_3$ -halogenated (F, Cl, Br, I) lower alkenyl-of  $C_2$ - $C_6$  such as CH=CHCl, CH=CHBF and CH=CHI, lower alkynyl-of  $C_2$ - $C_6$ -such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl-of  $C_3$ - $C_6$ -lower alkoxy of  $C_4$ - $C_6$ -such as  $CH_2OH$  and  $CH_2OH$ , halogenated (F, Cl, Br, I) lower alkoxy of  $C_4$ - $C_6$ - $C_6$ - $C_0$ - $C_6$ -

R2 is an optionally-substituted alkyl-of C<sub>4</sub>·C<sub>42</sub> (particularly-when the alkyl-io an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>·C<sub>65</sub> optionally-substituted lower alkenyl-of C<sub>2</sub>·C<sub>65</sub> or optionally-substituted acyl-

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 86 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a West Nile virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 11 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a West-Nile virus infection-comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-('-methyl nucleoside (B-D) or its pharmaceutically acceptable salt or prodrug thereof of the formula:

optionally in a pharmaceutically acceptable carrier.

Claims 87-90 (Canceled).

Claim 91 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 1 or its pharmaceutically acceptable salt or produce optionally in a pharmaceutically acceptable carrier.

a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside ( $\beta$ -D or  $\beta$ -L) of the formula:

wherein

Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F, Cl. Br. or I:

R<sup>4</sup> and R<sup>2</sup> are independently H<sub>1</sub> phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H<sub>1</sub> phosphonate, including stabilized H<sub>2</sub> phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t- or D-amino acid (or racemic-mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>3</sup> is H or phosphate; R<sup>2</sup> is H or

phosphate;  $R^4$  and  $R^2$  or  $R^2$  can also be linked with cyclic phosphate group:

R3 and R3 are independently H. C., alkyl. C., alkenyl. C., alkynyl. vinyl. No. CN-Cl-Br-F-L-NO2-C(O)O(C1.48lkvl), C(O)O(C1.48lkvl), C(O)O(C1.48lk alkynyl), C(O)O(C\_a alkenyl), O(C\_a acyl), O(C\_a alkyl), O(C\_a alkenyl), S(C1., acv1), S(C1., alkv1), S(C1., alkvnv1), S(C3., alkenv1), SO(C1., acv1), SO(C\_\_alkyl)\_SO(C\_\_alkynyl)\_SO(C\_\_alkenyl)\_SO(C\_\_acyl)\_ SO(CL alkyl) SO(CL alkynyl) SO(CL alkenyl) O(S(CL acyl) OaS(Calladkyl), OaS(Calladkenyl), NHc, NH(Calladkyl), NH(Calladkenyl), NH(CL\_alkynyl), NH(Cl\_aacyl), N(Cl\_aalkyl), N(Cl\_aacyl), wherein alkyl, alkynyl, alkenyl and vinyl are optinally substituted by Nx. CN, one to three halogen (Cl. Br. F. D. NO. C(O)O(C, , alkyl). C(O)O(C, , alkyl). C(O)O(CLaelkynyl), C(O)O(CLaelkenyl), O(CLaelkyl), O(CLaelkyl), O(C\_\_alkenvl), S(C\_\_aevl), S(C\_\_alkvl), S(C\_\_alkvnvl), S(C\_a alkenyl) SO(C, acyl) SO(C, alkyl) SO(C, alkynyl) SO(C, alkenyl) SO/C, acyl) SO/C, alkyl) SO/C, alkynyl) SO/C, alkenyl), OzS(Ca., acvl), OzS(Ca., alkvl), OzS(Ca., alkenyl), NHo, NH(Ca., alkyl) NH(C\_ alkenyl) NH(C\_ alkynyl) NH(C\_ acyl) N(C\_ alkyl)-N(C1\_acvl), OR2 R2 and R2 can be linked together to form a vinvl optionally substituted by one or two of N. CN. Cl. Br. F. I. NO.:

R<sup>6</sup> is an optionally substituted alkyl-(including lower alkyl), cyano (CN), CH<sub>3</sub>;

OCH<sub>4</sub>, OCH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
(N<sub>2</sub>), CHCN, CH<sub>3</sub>N<sub>4</sub>, CH<sub>2</sub>NH<sub>3</sub>, CH<sub>2</sub>NHCH<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>)<sub>3</sub>, alkyne
(optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or prodrug thereof, optionally-in a pharmaceutically acceptable carrier.

Claim 92 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of

the nucleoside of claim 2 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 91,

wherein Base is selected from the group consisting of:

# Y is Nor CH.

R<sup>a</sup>, R<sup>4</sup> and R<sup>4</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>a</sub>, NHR', NR'<sub>a</sub>, lower alkyl of C<sub>4</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>4</sub>-C<sub>6</sub>, such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONH<sub>2</sub>, CONH<sub>2</sub>, CONR'<sub>2</sub>; CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R', and

R<sup>2</sup> is an optionally-substituted alkyl-of C<sub>1</sub>-C<sub>42</sub> (particularly-when the alkyl-is an amino acid residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>-C<sub>62</sub> optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>62</sub>, or optionally-substituted acyl-

Claim 93 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of

the nucleoside of claim 3 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

## The method of claim 91, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^{\lambda}$  is H,  $R^{\lambda}$  is OH,  $R^{\mu}$  is H,  $R^{\lambda}$  is H, and  $R^{\lambda}$  is NH2 or OH, and  $R^{\lambda}$  is NH2.

Claim 94 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 4 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of a (2/k)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D) of the formula.

wherein

Base is selected from the group consisting of

Y is N or CH:

R<sup>2</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid; including a phospholipid, an L-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in two is capable of providing a compound wherein R<sup>1</sup> is H or phosphate, R<sup>2</sup> is H or phosphate; R<sup>3</sup> and R<sup>3</sup> or R<sup>2</sup> can also be linked with cyclic phosphate group.

R<sup>2</sup> and R<sup>2</sup> are independently H, C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkenyl, C<sub>1-4</sub> alkynyl, vinyl, N<sub>3</sub>;

CN, Cl, Br, F, I, NO<sub>2</sub>, C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkyl), C(O)O(C<sub>1-4</sub> alkynyl), C(O)O(C<sub>1-4</sub> alkynyl), O(C<sub>1-4</sub> alkyl), O(C<sub>1-4</sub> alkyl), O(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), S(C<sub>1-4</sub> alkyl), SO(C<sub>1-4</sub> alkynyl), SO(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkynyl), SO<sub>2</sub>(C<sub>1-4</sub> alkyl), O<sub>2</sub>S(C<sub>1-4</sub> alkyl), O<sub>3</sub>S(C<sub>1-4</sub> alkynyl), NH<sub>2</sub>, NH<sub>4</sub>(C<sub>1-4</sub> alkyl), NH

$$\begin{split} & C(O)O(C_{1-\epsilon} \text{alkynyl}), \ C(O)O(C_{1-\epsilon} \text{alkenyl}), \ O(C_{1-\epsilon} \text{alkyl}), \ O(C_{1-\epsilon} \text{alkyl}), \ S(C_{1-\epsilon} \text{alkyl}), \ S(C_{1-\epsilon} \text{alkyl}), \ S(C_{1-\epsilon} \text{alkyl}), \ S(C_{1-\epsilon} \text{alkynyl}), \ S(C_{1-\epsilon} \text{alkyn$$

- R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently Hi, halogen including F, Cit, Br, I, OH, OR<sup>2</sup>, SH, SR<sup>2</sup>, NH<sub>2</sub>, NHR<sup>2</sup>, NR<sup>2</sup><sub>3</sub>, lower alkyl of C<sub>1</sub>, C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>2</sub>, C<sub>6</sub>, such as CF<sub>2</sub> and CH<sub>2</sub>CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>, C<sub>6</sub> such as CH=CHC<sub>1</sub>, talogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>, C<sub>6</sub>, such as CH=CHC<sub>1</sub>, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>, C<sub>6</sub>, lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>, C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>H, CO<sub>3</sub>H, CONH<sub>2</sub>, CONHR<sup>2</sup>, CONHR<sup>2</sup>, CONHR<sup>2</sup>, CH=CHCO1F, CH=CH
- R2 is an optionally substituted alkyl of  $C_1$ - $C_{12}$  (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of  $C_2$ - $C_{67}$  optionally substituted lower alkenyl of  $C_2$ - $C_{67}$  or optionally substituted acyl:
- R<sup>6</sup>-is an optionally substituted alkyl-(including-lower alkyl-), cyano (CN), CH<sub>2</sub>;

  OCH<sub>2</sub>; OCH<sub>3</sub>CH<sub>3</sub>, hydroxy-methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>2</sub>F), azido
  (N<sub>2</sub>), CHCN, CH<sub>2</sub>N<sub>3</sub>, CH<sub>2</sub>NH<sub>4</sub>, CH<sub>2</sub>NHCH<sub>3</sub>, CH<sub>2</sub>N(CH<sub>3</sub>)<sub>3</sub>, alkyne
  (optionally substituted), or fluoro:

or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier:

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Claim 95 (Withdrawn, Currently Amended). A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 5 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim 94, wherein

#### Base is

and R4 is H. R2 is OH, R2 is H. R2 is H. R4 is NH2 or OH, and R6 is H.

Claim 96 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 6 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) or its pharmaceutically acceptable salt or prodrug thereof of the structure

wherein Base is a purine or pyrimidine base:

X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemie), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or L and.

R<sup>4</sup> and R<sup>7</sup> are independently H, phosphate, including monophosphate, diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R<sup>4</sup> or R<sup>2</sup> is independently H or phosphate; R<sup>4</sup> and R<sup>7</sup> can also be linked with cyclic phosphate group, and optionally a pharmaceutically acceptable earnier.

Claim 97 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 7 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

# The method of claim 96, wherein

Base is selected from the group consisting of

$$R^4$$
 $R^5$ 
 $R^5$ 

R<sup>3</sup>, R<sup>4</sup> and R<sup>5</sup> are independently H, halogen including F, Cl. Br, I, OH, OR, SH, SR, NH, NHR, NR, lower alkyl of C<sub>2</sub>, C<sub>6</sub>, halogenated (F, Cl. Br, I)

lower alkyl-of C<sub>4</sub>-C<sub>6</sub>-such as CF<sub>3</sub> and CH<sub>2</sub>CH<sub>2</sub>F. Jower alkenyl-of C<sub>2</sub>-C<sub>6</sub> such as CH=CHC<sub>3</sub>, halogenated (F, Cl, Br, I) lower alkenyl-of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHCl, CH=CHBr and CH=CHI, lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>-such as C=CH<sub>3</sub>, halogenated (F, Cl, Br, I) lower alkynyl-of C<sub>2</sub>-C<sub>6</sub>, lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>, CO<sub>2</sub>H, CO<sub>2</sub>R'<sub>1</sub>-CONH<sub>2</sub>, CONHR'<sub>2</sub>-CONR-<sub>2</sub>, CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R'<sub>2</sub>-and,

R2 is an optionally-substituted alkyl-of C<sub>4</sub>. C<sub>42</sub> (particularly-when the alkyl-is an amino acid-residue), cycloalkyl, optionally-substituted alkynyl-of C<sub>2</sub>. C<sub>65</sub> optionally-substituted-lower-alkenyl-of C<sub>2</sub>. C<sub>65</sub> or optionally substituted acyl-

Claim 98 (Withdrawn; Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 8 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

The method of claim-96, wherein

Base is selected from the group consisting of (a) or (b):

and wherein  $R^4$  and  $R^7$  are  $H_r\,R^4$  is  $H_r$  and  $R^4$  is NH  $_2$  or OH, and  $R^5$  is NH  $_2$ 

Claim 99 (Withdrawn, Currently Amended): A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 9 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of a  $(2^tR)$ -2'-deoxy-2'-fluoro-2'-C-methyl nucleoside  $(\beta$ -D or  $\beta$ -L) of the formula:

wherein

Base is

X is O. S. CH<sub>2</sub>, Se, NH. N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl. Br, or t:

R<sup>4</sup> and R<sup>2</sup> are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug, H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl. O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl or arylalkyl sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an t-or D-amino acid (or racemic mixture), a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of

providing a compound wherein  $R^{\lambda}$  is H or phosphate;  $R^{\lambda}$  is H or phosphate,  $R^{\lambda}$  and  $R^{\lambda}$  or  $R^{\lambda}$  can also be linked with cyclic phosphate group.

R3 and R3 are independently H, C14 alkyl, C14 alkenyl, C14 alkynyl, vinyl, Na CN. Cl. Br. F. L. NO2 C(O)O(C2.4 alkvl). C(O)O(C4.4 alkvl). C(O)O(C4.4 alkynyl), C(O)O(C1.4 alkenyl), O(C1.4 acyl), O(C1.4 alkyl), O(C4.4 alkenyl), S(C\_aevl) S(C\_aikvl) S(C\_aekvevl) S(C\_aekeevl) SO(C\_aevl) SO(C, alkyl) SO(C, alkynyl) SO(C, alkenyl) SO(C, acyl) SO<sub>2</sub>(C<sub>1</sub>, alkvl), SO<sub>2</sub>(C<sub>1</sub>, alkvnvl), SO<sub>2</sub>(C<sub>1</sub>, alkenvl), O<sub>2</sub>S(C<sub>1</sub>, acvl), O<sub>3</sub>S(C<sub>1,4</sub> alkyl), O<sub>3</sub>S(C<sub>1,4</sub> alkenyl), NH<sub>2</sub>, NH(C<sub>1,4</sub> alkyl), NH(C<sub>1,4</sub> alkenyl); NH(Ci., alkynyl), NH(Ci., acyl), N(Ci., alkyl), N(Ci., acyl), wherein alkyl-alkynyl, alkenyl and vinyl are ontinally substituted by N., CN, one to three halogen (Cl. Br. F. D. NO. C(O)O(C., alkyl). C(O)O(C., alkyl). C(O)O(CLa alkynyl), C(O)O(CLa alkenyl), O(CLa acyl), O(CLa alkyl), O(C1.alkenyl), S(C1.acvl), S(C1.alkyl), S(C1.alkynyl), S(C1.a alkenyl), SO(C1.4 acvl), SO(C1.4 alkvl), SO(C1.4 alkvnyl), SO(C1.4 alkenyl) SO2(C14 acyl) SO2(C14 alkyl) SO2(C14 alkynyl) SO2(C14 alkenvl). O:S(Ca., acvl). O:S(Ca., alkvl). O:S(Ca., alkenvl). NHa. NH(Ca., alkyl), NH(Ca., alkenyl), NH(Ca., alkynyl), NH(Ca., acyl), N(Ca., alkyl); N(C\_\_\_acvl)\_ OR2-R2 and R2 can be linked together to form a vinvl optionally substituted by one or two of N., CN, Cl. Br. F. I. NO.:

R<sup>3</sup>-and R<sup>4</sup>-are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of C<sub>2</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>2</sub>-C<sub>6</sub>-such as CH<sub>2</sub>-CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub>-such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub>-such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub>-such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub>-lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>-C<sub>6</sub>-CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>-CONHR', CONR'<sub>2</sub>: CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R', and

> R<sup>\*</sup> (s an optionally substituted alkyl of C<sub>1</sub>, C<sub>2</sub>, (particularly when the alkyl is an amino acid residue), cycloalkyl, optionally substituted alkynyl of C<sub>2</sub>, C<sub>6</sub>; optionally substituted lower alkenyl of C<sub>2</sub>, C<sub>6</sub>; or optionally substituted nevl.

R° is an optionally substituted alkyl (including lower alkyl), cyano (CN), CH<sub>3</sub>; OCH<sub>3</sub>; OCH<sub>2</sub>CH<sub>3</sub>, hydroxy methyl (CH<sub>2</sub>OH), fluoromethyl (CH<sub>3</sub>F), azido (N<sub>3</sub>); CHCN, CH<sub>2</sub>N<sub>4</sub>; CH<sub>2</sub>NH<sub>4</sub>; CH<sub>2</sub>NHCH<sub>3</sub>; CH<sub>3</sub>N(CH<sub>3</sub>)<sub>2</sub>, alkyne (optionally substituted), or fluoro;

or its pharmaceutically-acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 100 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylaxis</u> of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 10 or its pharmaceutically acceptable salt or prodrug optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) of the formula:



wherein Base is



R\* and R\* are independently H, phosphate, including monophosphate; diphosphate, triphosphate, or a stabilized phosphate prodrug. H-phosphonate, including stabilized H-phosphonates, acyl, including optionally substituted phenyl and lower acyl, alkyl, including lower alkyl, O-substituted carboxyalkylamino or its peptide derivatives, sulfonate ester, including alkyl-or acylalkyl-sulfonyl, including methanesulfonyl and benzyl, wherein the phenyl group is optionally substituted, a lipid, including a phospholipid, an L-or D-amino acid, a carbohydrate, a peptide, a cholesterol, or other pharmaceutically acceptable leaving group which when administered in vivo is capable of providing a compound wherein R\* or R\* is independently H or phosphate; R\* and R\* can also be linked with evelic phosphate group.

R<sup>3</sup> and R<sup>2</sup> are independently H, halogen including F, Cl, Br, I, OH, OR', SH, SR', NH<sub>2</sub>, NHR', NR'<sub>2</sub>, lower alkyl of G<sub>3</sub>-C<sub>6</sub>, halogenated (F, Cl, Br, I) lower alkyl of C<sub>1</sub>-C<sub>6</sub> such as CH<sub>2</sub>-CH<sub>2</sub>F, lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CH<sub>2</sub>, halogenated (F, Cl, Br, I) lower alkenyl of C<sub>2</sub>-C<sub>6</sub> such as CH=CHCl, CH=CHBr and CH=CHL, lower alkynyl of C<sub>2</sub>-C<sub>6</sub> such as C=CH, halogenated (F, Cl, Br, I) lower alkynyl of C<sub>2</sub>-C<sub>6</sub> lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub> such as CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>OH, halogenated (F, Cl, Br, I) lower alkoxy of C<sub>4</sub>-C<sub>6</sub>; CO<sub>2</sub>H, CO<sub>2</sub>R', CONH<sub>2</sub>, CONHR', CONR'<sub>2</sub>; CH=CHCO<sub>2</sub>H, CH=CHCO<sub>2</sub>R'.

R<sup>\*</sup> is an optionally-substituted alkyl of C<sub>1</sub>-C<sub>12</sub> (particularly-when the alkyl is an amino acid residue), cycloalkyl, optionally-substituted alkynyl of C<sub>2</sub>-C<sub>6</sub>; optionally-substituted lower alkenyl of C<sub>2</sub>-C<sub>6</sub>; or optionally-substituted acyl-

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or its pharmaceutically acceptable salt or prodrug thereof, optionally in a pharmaceutically acceptable carrier.

Claim 101 (Withdrawn; Currently Amended): <u>A method for the treatment or prophylaxis</u> of a Dengue virus infection comprising administering to a host an antivirally effective amount of the nucleoside of claim 11 or its pharmaceutically acceptable salt or produce optionally in a pharmaceutically acceptable carrier.

A method for the treatment or prophylaxis of a Dengue virus infection comprising administering to a host an antivirally effective amount of a (2/R) 2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D) or its pharmaceutically acceptable salt or prodrug thereof of the formula:

optionally in a pharmaceutically acceptable carrier.

Claims 102-105 (Canceled).

Claim 106 (Withdrawn; Currently Amended): The method of 31, wherein the antivirally effective amount of (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3

inhibitor, a NS3-4A inhibitor; a helicase inhibitor; a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide, a thiazofidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine, a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide, polyadenylic acid; a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine; an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome; and mycophenolate

Claim 107 (Withdrawn; Currently Amended): The method of 41, wherein the antivirally effective amount of (2/R)-2'-deoxy-2'-fluoro-2'-C'-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor; a helicase inhibitor, a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor, and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide; polyadenylic acid; a benzimidazoles; thymosin, a beta tubulin inhibitor; a prophylactic vaccine; an immune modulator, an IMPDH inhibitor, silybin-phosphatidylcholine phytosonie, and mycophenolate.

Claims 108-109 (Canceled).

Claim 110 (Withdrawn; Currently Amended): The method of 46, wherein the antivirally effective amount of (2/t/)-2'-deoxy-2'-fluoro-2'-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin, levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor, a helicase inhibitor, a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor, and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene, amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide; polyadenylic acid; a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine, an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome; and mycophenolate.

Claim 111 (Withdrawn; Currently Amended): The method of 56, wherein the antivirally effective amount of (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12, ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor; a helicase inhibitor; a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzanedicarboxanide; polyadenylic acid, a benzanidazoles, thymosin; a beta tubulin inhibitor.

a prophylactic vaccine; an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome, and mycophenolate.

Claims 112-113 (Canceled).

Claim 114 (Withdrawn, Currently Amended): The method of 61, wherein the antivirally effective amount of (2\*R)-2\*-deoxy-2\*-fluoro-2\*-C\*-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin, levovirin, a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor; a helicase inhibitor; a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine, a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide, polyadenylic acid; a benzimidazoles, thymosin; a beta tubulin inhibitor; a prophylactic vaccine; an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome, and mycophenolate.

Claim 115 (Withdrawn; Currently Amended): The method of 71, wherein the antivirally effective amount of (2/R)-2-deoxy-2-fluoro-2-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin, levovirin; a protease inhibitor including an NS3

inhibitor, a NS3-4A inhibitor; a helicase inhibitor; a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide, a thiazofidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine, a bile acid; N-(phosphonoacetyl)-L-aspartic acid; a benzenedicarboxamide, polyadenylic acid; a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine, an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome; and mycophenolate

# Claims 116-117 (Cancled)

Claim 118 (Withdrawn; Currently Amended): The method of 76, wherein the antivirally effective amount of (2<sup>th</sup>)-2<sup>th</sup>-deoxy-2<sup>th</sup>-fluore-2<sup>th</sup>-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor, a helicase inhibitor, a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin, an IRES inhibitor, and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E. squalene, amantadine; a bile acid, N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide, polyadenylic acid, a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine; an immune modulator, an IMPDH inhibitor, silybin-phosphatidylcholine phytosome; and mycophenolate.

Claim 119 (Withdrawn; Currently Amended): The method of 86, wherein the antivirally effective amount of (27/)-2'-deoxy-2'-fluoro-2'-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor, a helicase inhibitor, a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide; a thiazolidine derivative; a benzanilide, a ribozyme, another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant including vitamin E, squalene, amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid, a benzenedicarboxamide; polyadenylic acid; a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine, an immune modulator, an IMPDH inhibitor, silybin-phosphatidylcholine phytosome; and mycophenolate.

## Claims 120-121 (Canceled).

Claim 122 (Withdrawn, Currently Amended): The method of 91, wherein the antivirally effective amount of (2/R)-2-deoxy-2-fluoro-2-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin, levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor, a helicase inhibitor, a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor, gliotoxin, an IRES inhibitor, and annisense oligonucleotide, a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative; a 1-amino-alkylcyclohexane; an antioxidant

including vitamin E; squalene; amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid; a benzenedicarboxamide, polyadenylic acid; a benzimidazoles; thymosin; a beta tubulin inhibitor; a prophylactic vaccine; an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome; and mycophenolate.

Claim 123 (Withdrawn; Currently Amended): The method of 101, wherein the antivirally effective amount of (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl the nucleoside is administered in combination or alternation with at least one treatment selected from the group consisting of: interferon, including interferon alpha 2a, interferon alpha 2b, a pegylated interferon, interferon beta, interferon gamma, interferon tau and interferon omega; an interleukin, including interleukin 10 and interleukin 12; ribavirin; interferon alpha or pegylated interferon alpha in combination with ribavirin or levovirin; levovirin; a protease inhibitor including an NS3 inhibitor, a NS3-4A inhibitor; a helicase inhibitor; a polymerase inhibitor including HCV RNA polymerase and NS5B polymerase inhibitor; gliotoxin; an IRES inhibitor; and antisense oligonucleotide, a thiazolidine derivative; a benzanilide, a ribozyme; another nucleoside, nucleoside prodrug or nucleoside derivative, a 1-amino-alkylcyclohexane; an antioxidant including vitamin E; squalene; amantadine; a bile acid; N-(phosphonoacetyl)-L-aspartic acid; a benzenedicarboxamide, polyadenylic acid; a benzimidazoles; thymosin, a beta tubulin inhibitor; a prophylactic vaccine, an immune modulator, an IMPDH inhibitor; silybin-phosphatidylcholine phytosome; and mycophenolate.

Claims 124-125 (Canceled).

Claim 126 (Withdrawn, Currently Amended). A method of synthesizing the nucleoside of claim 11, which comprises a (2<sup>2</sup>R)-2<sup>2</sup>-deoxy-2<sup>2</sup>-fluoro-2<sup>2</sup>-(-methyl-nucleoside (β-I) or β-L) comprising elycosylation of a nucleobase with an intermediate

glycosylating the pyrimidine with a compound having the following structure:

wherein R is lower alkyl, acyl, benzoyl, or mesyl; and Pg is any acceptable protecting group consisting of but not limited to C(O)-alkyl, C(O)Ph, C(O)aryl, CH<sub>3</sub>, CH<sub>2</sub>-alkyl, CH<sub>2</sub>-alkeyl, CH<sub>2</sub>Ph, CH<sub>2</sub>-aryl, CH<sub>2</sub>O-aryl, CH<sub>2</sub>O-aryl, SO<sub>2</sub>-alkyl, SO<sub>2</sub>-aryl, tert-butyldimethylsilyl, tert-butyldiphenylsilyl, or both Pg's may come together to for a 1,3-{ 1,1,3,3- tetraisopropyldisiloxanylidene).

Claim 127 (Withdrawn, Currently Amended): A method of synthesizing the nucleoside of claim 1, which comprises a (2/R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (β-D or β-L) comprising selective deprotection of either Pg in an intermediate of the

selectively deprotecting the 3'-OPg or the 5'-OPg of a compound having the following structure:

wherein, X is O. S. CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S; or racemie), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or I; and Pg is independently any pharmaceutically acceptable protecting group selected from the group consisting of C(O)-alkyl, C(O)Ph, C(O)aryl, CH<sub>3</sub>, CH<sub>2</sub>-alkyl, CH<sub>2</sub>-alkenyl, CH<sub>2</sub>Ph, CH<sub>2</sub>-aryl, CH<sub>2</sub>O-aryl, SO<sub>2</sub>-alkyl, SO<sub>2</sub>-aryl, tert-butyldimethylsilyl, tert-butyldiphenylsilyl, or both Pg's may come together to for a 1,3-(1,1,3,3-tetraisopropyldisiloxanylidene).

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Claim 128 (Withdrawn): An intermediate in the synthesis of a (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (6-D or B-L), wherein the intermediate is of the structure:

wherein R is lower alkyl, acyl, benzoyl, or mesyl; and Pg is any acceptable protecting group consisting of but not limited to C(O)-alkyl, C(O)Ph, C(O)aryl, CH<sub>3</sub>, CH<sub>2</sub>-alkyl, CH<sub>2</sub>-alkenyl, CH<sub>2</sub>Ph, CH<sub>2</sub>-aryl, CH<sub>2</sub>O-alkyl, CH<sub>2</sub>O-aryl, SO<sub>2</sub>-alkyl, SO<sub>2</sub>-aryl, tert-butyldimethylsilyl, tert-butyldiphenylsilyl, or both Pg's may come together to for a 1,3-(1,1,3,3-tetraisopropyldisiloxanylidene).

Claim 129 (Withdrawn). An intermediate in the synthesis of a (2'R)-2'-deoxy-2'-fluoro-2'-C-methyl nucleoside (B-D or β-L), wherein the intermediate is of the structure:

wherein, X is O, S, CH<sub>2</sub>, Se, NH, N-alkyl, CHW (R, S, or racemic), C(W)<sub>2</sub>, wherein W is F, Cl, Br, or I; and Pg is independently any pharmaceutically acceptable protecting group selected from the group consisting of C(O)-alkyl, C(O)Ph, C(O)aryl, CH<sub>3</sub>, CH<sub>2</sub>-alkyl, CH<sub>2</sub>-alkenyl, CH<sub>2</sub>Ph, CH<sub>2</sub>-aryl, CH<sub>2</sub>O-alkyl, CH<sub>2</sub>O-aryl, SO<sub>2</sub>-alkyl, SO<sub>2</sub>-aryl, terr-butyldimethylsilyl, terr-butyldiphenylsilyl, or both Pg's may come together to for a 1.3-(-1.1,3,3-tetraisopropyldisiloxanylidene).

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